

ANNUAL REPORT

OF THE

PUBLIC WORKS DEPARTMENT



OF THE

CITY OF BOSTON

1928

mb



No. 6355.53

1928



GIVEN BY

Commissioner of Public Works

COMPLIMENTS

JAMES H. SULLIVAN

Commissioner of Public Works

PLEASE EXCHANGE

ANNUAL REPORT
OF THE
PUBLIC WORKS DEPARTMENT
FOR THE
YEAR 1928



CITY OF BOSTON
PRINTING DEPARTMENT
1929



* 6355,53

1928

Boston. Commissioner of Public Works.
April 30, 1930

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ANNUAL REPORT
OF THE
PUBLIC WORKS DEPARTMENT
FOR THE
YEAR ENDING DECEMBER 31, 1928.

Boston, January 1, 1929.

HON. MALCOLM E. NICHOLS,
Mayor of Boston.

DEAR SIR,— In compliance with the Revised Ordinances, the annual report of the operations and expenses of the Public Works Department for the year ending December 31, 1928, is respectfully submitted. The Public Works Department, created by Ordinances 1910, chapter 9, now chapter 27 of the Revised Ordinances of 1925, was formed by consolidating the Engineering, Water and Street Departments.

ORGANIZATION.

The department is composed of six main divisions, viz.:

Central Office.— The Central Office is composed of the accounting force of the entire department under the charge of the secretary and chief clerk.

Bridge and Ferry Division.— This division, under a division engineer, has the charge and care of all bridges used as highways which are in whole, or in part, under the control of the city; the care and management of the ferries owned by the city, including boats, slips, drops and buildings.

NOTE.— The Boston and Cambridge Division, so-called, is not, strictly speaking, a division of the Public Works Department, as this work is in charge of a committee of two, one member appointed by the Mayor of Boston and the other by the Mayor of Cambridge, under the provisions of chapter 412 of the Acts of 1904; but because of the fact that the present Commissioner of Public Works is the Boston member of this commission and also because one half of the expense of this commission is defrayed by the Bridge Service, it is in this report treated as a division of this department.

Highway Division.— This division, under a division engineer, has the care of the construction, reconstruction and maintenance of roadways and sidewalks, and the care of lamps and the lighting of streets, parks and alleys.

Sanitary Division.— This division, under a division engineer, has charge of the collection and removal of ashes, garbage and refuse, street cleaning and the oiling and flushing of streets.

Sewer Division.— This division, under a division engineer, has charge of the construction of sewers, catch-basins and waterways.

Water Division.— This division, under a division engineer, has the care of water pipes, installation of meters, water service, laying and relaying of water mains and the high pressure fire service.

GENERAL.

The principal activities of the Bridge Service during the past year have been the widening of the Ashland

Street Bridge over the New York, New Haven & Hartford Railroad, and the rebuilding of the Columbus Avenue Bridge over the New York, New Haven & Hartford Railroad.

The much discussed rebuilding of the Congress Street Bridge over Fort Point Channel is finally assuming a definite status. Plans are about ready for advertising for bids to extend the tunnel for the water pipes. The contract will be let early in 1929, and the contract for the bridge will follow the completion of the tunnel.

The department is much concerned over the condition of the Chelsea North Bridge. The structure is gradually deteriorating and should be replaced with a more permanent and rigid structure.

A contract was let for the rebuilding of the River Street Bridge to conform to the widening of the street, but due to legal informalities, the work was not started. It is expected that these matters will soon be adjusted and the work completed without further delay.

Surveys of the Albany Street Bridge over the passenger tracks of the Boston & Albany Railroad and Shawmut Avenue Bridge over the tracks of the Boston & Albany and New York, New Haven & Hartford Railroads show conditions that call for immediate attention.

In the Ferry Service there are two old wooden boats which are not equal to the traffic and should be replaced with steel boats; and steel landing bridges should be substituted for the present wooden approaches.

Highway Division.—Fifty-four streets were laid out by the Board of Street Commissioners, of which twenty-four were constructed this year, together with twenty-seven of the streets laid out in 1927.

An improvement of great importance was the widening and construction of Sullivan square, Charlestown. This location is a very congested area, which has been greatly relieved by the reconstruction.

The following are some of the important streets reconstructed from the appropriation for repair and reconstruction of streets:

D street, South Boston, West First street to Dorchester avenue.

Border street, East Boston, Central square to Condor street.

Cambridge street, Charlestown, Sever street to Somerville line.

Cambridge street, Brighton, Charles river to Harvard avenue.

Boylston street, Roxbury, Ipswich street to Brookline avenue.

Heath street, Roxbury, Columbus avenue to South Huntington avenue.

Longwood avenue, Roxbury, Brookline avenue to Riverway.

Hanover street, city proper, Washington street to Commercial street.

Harrison avenue, city proper, Dover street to East Newton street.

Providence street, city proper, Arlington street to Church street.

The department force has continued the erection of street signs on the most important thoroughfares of Dorchester, South Boston, Roxbury, West Roxbury, East Boston.

Lighting Service.— One thousand, one hundred thirty-two street lamps of various types were installed during the year and 759 discontinued, including the substitution of 570 Mazda lamps for magnetite arcs.

At the close of the year we had 22,041 street lamps in operation, comprising 5,634 arcs, 6,338 incandescents, 9,881 single mantle gas lamps and 188 single mantle fire alarm gas lamps.

Sanitary Division.— In addition to the upkeep and

maintenance of the equipment, several new trucks have been purchased, and also pick up sweepers and collect sanitary bodies.

The snow storms were met with an efficient snow fighting force of plows, tractors and trucks opening the streets and removing the snow without delay.

Street flushing has been general over the city this year, the flushers being assigned to all sections, which has been very favorably commented upon by the citizens. Six city and six contract flushers were employed during the summer and fall.

A problem of importance is presenting itself for solution in the disposition of old automobile bodies which are abandoned in all sections of the city. It is assuming such proportions as to be a menace to travel and it has become necessary for the city forces to remove them from the public streets to prevent them being an obstruction to travel. They are abandoned on our streets mostly during the night, and not being able to establish ownership, their removal devolves upon the city forces; the practice is assuming such proportions that drastic measures will be necessary to prohibit it.

Sewer Division.—The laying out of new streets by the Board of Street Commissioners and property development in the outlying sections have provided an excess of work for this division, resulting in the building of twenty-one miles of sewers and 678 catch-basins.

The petitions for sanitary sewers and surface drains result in a large amount of detail work preparing plans and estimates, to determine the extent of the work that can be considered within the limits of the appropriation.

The construction of the Porter street outlet in East Boston is progressing rapidly and will be completed well within the time limit.

There has been considerable agitation relative to the storm water overflows at Savin Hill Beach. After several hearings an appropriation of \$450,000 outside

the debt limit was provided. Plans are in preparation and construction will begin the coming season.

Water Division.—During the year the activities of the Metropolitan District Commission in letting contracts for shafts and tunnels to provide additional water supply for the Metropolitan District made it necessary to increase the water rates, in order that the City of Boston might be able to meet the increased assessment levied by the Metropolitan District Commission to cover the interest and sinking fund requirements of the loan provided for that purpose. The increased water rates went into effect July 1, 1928.

Continued development of property and new street construction required the laying of over eight miles of water mains in the outlying sections, twenty-two contracts having been awarded for that purpose.

Over 150,000 linear feet of 4-inch and 6-inch water pipe laid over fifty years was relaid with 8-inch and 12-inch pipe, improving the fire protection by furnishing water in quantity as may be needed.

Complying with the legislative act of 1907, all water services have been metered. On December 31, 1928, the total number of services metered was 96,464, —there remaining about 500 services to municipal property to meter.

APPROPRIATIONS.

The money assigned for the maintenance work of the Public Works Department during the year 1928 was derived from the income of the city raised by taxation. In December, 1927, the department estimates were submitted to the Mayor, in segregated form, who made such allowance for each item in the budget as he considered necessary and submitted them to the City Council. The total maintenance appropriations as passed by the City Council and approved by the Mayor

are shown below. On another page will be found the total expenditures by each service for each item in the segregated budget:

Central Office	\$90,047 20
Bridge Service	480,040 92
Ferry Service	560,008 76
Lighting Service	977,308 74
Paving Service	1,681,190 42
Sanitary Service	3,168,974 02
Sewer Service	717,607 39
Water Service	1,574,699 88
Total	<u>\$9,249,877 33</u>

Yours respectfully,

JAMES H. SULLIVAN,
Commissioner of Public Works.

**Expenditures Under the Maintenance Appropriation of the
From January 1, 1928,**

GROUP AND ITEM.	Central.	Bridge.	Ferry.
A. PERSONAL SERVICE AS PER SCHEDULE A:			
1. Permanent employees.....	\$82,591 93	\$345,466 88	\$351,867 71
2. Temporary employees.....		16,038 59	15,115 68
3. Unassigned.....		6,083 08	10,182 94
B. SERVICE OTHER THAN PERSONAL:			
1. Printing and binding.....	514 40		269 95
3. Advertising and posting.....		1 50	56 00
4. Transportation of persons.....	80 31	682 02	121 25
5. Cartage and freight.....		3 69	228 96
6. Hire of teams and auto trucks.....			1,960 00
8. Light, heat and power.....		10,435 52	9,787 66
10. Rent, taxes and water.....		343 34	28 70
12. Bond and insurance premiums.....	10 00		169 00
13. Communication.....	36 00	298 82	257 69
14. Motor vehicle repairs and care.....	564 98	1,448 68	
15. Motorless vehicle repairs.....			63 58
16. Care of animals.....			
18. Cleaning.....		14 90	36 00
19. Removal of ashes, dirt and garbage.....			
20. Disposal of ashes, dirt and garbage.....			
21. Removal of snow.....			
28. Expert.....			
35. Fees, service of venires, etc.....	7 50	48 50	20 00
37. Photographic and blueprinting.....			
39. General plant.....	122 20	31,464 10	73,759 28
42. Repairing streets, etc.....			
C. EQUIPMENT:			
2. Machinery.....			
3. Electrical.....			
4. Motor vehicles.....	241 19	3,596 42	
5. Motorless vehicles.....			
6. Stable.....			
7. Furniture and fittings.....		132 25	20 00
9. Office.....	104 00		

Several Services of the Segregated Budget.
to December 31, 1928.

Lighting.	Paving.	Sanitary.	Sewer.	Water.	Totals.
\$5,643 04	\$1,077,339 03	\$1,712,079 69	\$415,511 12	\$909,862 21	\$2,900,361 61
.....	30,073 20	40,443 39	9,087 39	26,770 00	137,528 25
.....	42,379 25	125,102 90	22,022 92	32,400 30	238,171 39
.....	.....	570 00	51 00	123 80	1,529 15
.....	73 00	51 25	50 75	214 00	446 50
18 65	1,110 84	76 55	1,457 91	7,661 49	11,219 02
.....	14 65	16 93	9 75	49 77	323 75
.....	9,514 35	49,705 92	1,769 50	75 00	63,024 77
967,093 18	2,251 72	5,192 42	33,645 16	5,143 06	1,033,548 72
.....	3,349 72	2,130 00	1,222 08	391 25	7,465 09
.....	18 00	5 00	.....	65 00	267 00
.....	1,955 49	1,543 67	858 82	2,054 27	7,004 76
142 75	30,153 37	71,604 78	10,283 44	19,038 60	133,236 60
.....	866 60	19,136 80	35 05	13 25	20,115 28
.....	3,903 25	5,816 51	247 50	471 75	10,439 01
.....	178 20	276 10	70,750 88	57 82	71,313 90
.....	.....	404,887 80	.....	.....	404,887 80
.....	264 08	346,429 59	307 50	104 00	347,105 17
.....	43,293 16	.....	.....	.....	43,293 16
.....	.....	.....	.....	725 00	725 00
3 00	821 00	891 50	262 50	884 10	2,938 10
.....	16 00	.....	.....	28 48	44 48
2,801 63	40,399 45	15,591 61	25,955 69	135,133 15	325,227 11
.....	19,734 69	.....	1,595 42	83,583 30	104,913 41
.....	.....	.....	.....	.....	6,950 00
.....	.....	.....	.....	30 24	30 24
9 65	26,382 38	80,454 44	5,213 72	34,275 03	150,172 83
.....	.....	905 67	.....	.....	905 67
.....	150 05	1,258 22	11 57	85 75	1,505 59
.....	12 00	97 00	24 00	297 75	583 00
.....	100 35	.....	61 50	312 76	578 61

**Expenditures Under the Maintenance Appropriation of the
From January 1, 1918,**

GROUP AND ITEM.	Central.	Bridge.	Ferry.
C. EQUIPMENT:			
11. Marine.....			\$363 87
13. Tools and instruments.....		\$2,020 12	2,218 45
16. Wearing apparel.....		22 10	343 88
17. General plant.....		615 76	351 32
D. SUPPLIES:			
1. Office.....	\$2,523 14	2,052 62	1,140 94
2. Food and ice.....		80 25	73 20
3. Fuel.....		3,186 71	67,244 43
4. Forage and animal.....			
8. Laundry, cleaning, toilet.....		136 46	155 97
11. Motor vehicle.....	370 56	1,545 94	
13. Chemicals and disinfectants.....		7 20	360 26
16. General plant.....		1,034 21	2,902 93
E. MATERIALS:			
1. Building.....		171 51	923 11
2. Highways.....			
3. Bridges.....		34,847 32	
4. Ferries.....			10,073 39
5. Sewer.....			
6. Water.....			
9. Machinery.....		228 93	
10. Electrical.....		529 77	1,064 53
13. General plant.....		30 56	
F. SPECIAL ITEMS:			
2. Damages.....			
7. Pensions and annuities.....		3,938 53	6,420 63
11. Workingmen's compensation.....		102 86	744 25
Totals.....	\$87,166 21	\$466,609 14	\$558,335 56

Several Services of the Segregated Budget.—Concluded.
to December 31, 1928.

Lighting.	Paving.	Sanitary.	Sewer.	Water.	Totals.
					\$363 87
	\$11,548 44	\$5,991 76	\$2,431 05	\$67,837 72	92,047 54
	4 50	212 49	936 97	189 09	1,709 03
\$1,173 55	371 59	932 70	2,551 39	26 99	6,023 30
214 53	7,502 87	3,569 97	2,546 94	9,310 55	28,861 56
	153 55	136 61	205 20	67 40	716 21
	14,088 13	3,868 91	49,573 39	1,779 36	139,740 93
	13,656 43	58,249 33	45 58	1,940 18	73,891 52
	82 13	89 28	247 27	148 42	859 53
95 78	13,429 97	43,630 54	3,792 12	6,071 00	68,935 91
	132 97	179 91	133 97	60 88	875 19
	4,194 68	1,360 13	3,181 18	3,686 92	16,360 05
	2,071 23		2,310 09	80 88	5,556 82
	256,142 83	21,016 22			277,159 05
					34,847 32
					10,073 39
			9,293 80		9,293 80
				219,494 83	219,494 83
					228 93
	105 36	94 97	627 05	586 55	3,008 23
	15,172 61	50,730 51	5,532 94	1,942 32	73,408 94
				7,795 27	7,795 27
	15,745 93	14,832 89	3,087 00	14,387 56	58,412 54
	3,271 89	12,721 99	1,791 43	2,811 71	21,444 13
\$977,195 76	\$1,698,978 94	\$3,101,885 95	\$688,722 54	\$1,598,068 76	\$9,176,962 86

**Expenditures Under the Maintenance Appropriation of the
From January 1, 1928,**

GROUP AND ITEM.	Central.	Bridge.	Ferry.
Commissioner.....	\$9,000 00		
Division engineers.....		\$3,750 00	\$1,250 00
Engineers in charge.....			
Clerks and stenographers.....	60,695 35	3,776 43	1,562 65
Address printers.....			
Blueprinters.....	3,325 66		
Chauffeurs.....	1,721 50	5,007 85	
Cement testers.....	4,841 20		
Chief inspectors.....			
Chemist and assistant.....			
Cashiers.....			2,264 64
Captains.....			30,616 84
Deckhands.....			41,584 84
Drawtenders.....		229,650 97	
Draughtsman.....		5,901 00	
Engineers, assistants, civil.....		17,423 31	29,800 00
Engineers (steam).....			
Electricians.....		2,034 50	2,034 50
Emergency men.....			
Foreman, general.....			3,367 86
Foremen.....		2,365 02	
Subforemen.....		5,116 75	
Instrumentmen.....		6,421 58	
Rodmen.....		933 84	
Inspectors.....		5,157 14	
Inspector, property.....	3,008 22		
Laborers, janitors, teamsters, watchman, stablemen, etc.....		20,884 50	29,898 59
Mechanics.....		33,485 66	43,005 75
Meter readers.....			
Medical inspectors.....		200 00	100 00
Oilers and firemen.....			92,213 88
Quartermasters.....			23,967 12
Sewer gatemen, cleaners, etc.....			
Supervisors.....		3,358 33	
Supervisor, deputy.....			

Several Services by Items of the Segregated Budget.
to December 31, 1928.

Lighting.	Paving.	Sanitary.	Sewer.	Water.	Totals.
					\$9,000 00
\$1,250 00	\$3,750 00	\$1,986 10	\$5,000 00	\$5,000 00	21,986 10
	860 04			3,858 33	4,718 37
2,431 94	31,502 52	5,529 11	8,564 53	93,514 83	207,577 36
				1,300 00	1,300 00
					3,325 66
	33,705 68	154,810 61	23,074 49	23,056 09	241,376 22
	540 53				5,381 73
	997 63			2,264 64	3,262 27
	662 66				662 66
				2,416 67	4,681 31
					30,616 84
					41,584 84
					229,650 97
	739 48		7,033 67	4,200 00	17,874 15
	9,178 21	2,766 05	13,778 44	12,646 81	85,592 82
	19,725 50		11,628 00	154 00	31,507 50
			1,690 00		5,759 00
				43,826 34	43,826 34
	2,753 21		8,268 17	2,665 67	17,054 91
	27,803 74	50,509 00		25,639 29	106,317 05
	37,759 12			1,963 99	44,839 86
	8,566 28		15,970 30	11,540 25	42,498 41
	839 39				1,773 23
1,961 10	46,562 93	153,444 93	41,984 50	44,575 38	293,685 98
					3,008 22
	605,079 49	1,230,516 36	123,668 92	211,304 72	2,220,254 23
	223,048 31	86,858 78	46,024 75	338,236 75	770,660 00
				65,102 44	65,102 44
	400 00	2,200 00	100 00	600 00	3,600 00
	9,879 50		66,124 75	704 00	168,922 13
					23,967 12
			35,605 12		35,605 12
	2,766 05	4,010 96			10,135 34
		3,509 59			3,509 59

**Expenditures Under the Maintenance Appropriation of the
From January 1, 1928,**

GROUP AND ITEM.	Central.	Bridge.	Ferry.
Storekeepers.....			\$1,763 22
Superintendent and deputy.....			
Telephone operators.....			
Tollmen and gatemen.....			48,437 82
Veterinarian.....			
Wharfingers.....			
Weighers.....			
Yardmasters.....			
Yardmen.....			
Permanent (totals).....	\$82,591 93	\$345,466 88	\$351,867 71
Temporary.....		16,038 59	15,115 68
Unassigned.....		6,083 08	10,182 94
Totals.. . . .	\$82,591 93	\$367,588 55	\$377,166 33

Several Services by Items of the Segregated Budget.—Concluded.
to December 31, 1928.

Lighting.	Paving.	Sanitary.	Sewer.	Water.	Totals.
		\$1,763 22		\$1,963 99	\$5,490 43
	\$2,506 85		\$3,509 59	8,689 50	14,705 94
		1,462 57		1,304 76	2,767 33
					48,437 82
	500 00	2,250 00	125 00	125 00	3,000 00
		3,727 21			3,727 21
	1,763 22	1,763 22			3,526 44
		1,763 22			1,763 22
	5,448 69	3,208 76	3,360 89	3,208 76	15,227 10
\$5,643 04	\$1,077,339 03	\$1,712,079 69	\$415,511 12	\$909,862 21	\$4,900,361 61
	30,073 20	40,443 39	9,087 39	26,770 00	137,528 25
	42,379 25	125,102 90	22,022 92	32,400 30	238,171 39
\$5,643 04	\$1,149,791 48	\$1,877,625 98	\$446,621 43	\$969,032 51	\$5,276,061 25

The expenditures under the several appropriations for the different services for the year 1928 were as follows:

DIVISIONS AND SERVICES.	Current Expenses.	Special Appropriations.	Total Expenditures.	Balance December 31, 1928.
Central Office.....	\$87,166 21	.....	\$87,166 21	.....
Bridge Service.....	466,609 14	\$220,376 94	686,986 08	¹ \$934,433 19
Ferry Service.....	558,335 56	118,059 34	676,394 90	² 125,217 59
Lighting Service.....	977,195 76	.....	977,195 76	.....
Paving Service.....	1,698,978 94	1,849,644 57	3,548,623 51	146,405 28
Sanitary Service.....	3,101,885 95	.....	3,101,885 95	.....
Sewer Service.....	688,722 54	1,322,225 56	2,010,948 10	³ 758,980 38
Water Service.....	1,598,068 76	208,506 34	1,806,575 10	61,772 37
Totals.....	\$9,176,962 86	\$3,718,812 75	\$12,895,775 61	\$2,026,808 81

¹ \$800,000 authorized, but not issued, included.

² \$50,000 authorized, but not issued, included.

³ \$550,000 authorized, but not issued, included.

Cost of Maintenance of the Public Works Department Since 1919.

DIVISION AND SERVICES.	1920-21.	1921-22.	Special Account 1921-22.	1922-23.	1923-24.	1924-25.	1925. (11 months.)	1926.	1927.	1928.
Central Office.....	\$91,373 98	\$88,308 02	\$3,072 64	\$100,457 23	\$84,717 60	\$86,511 11	\$81,432 27	\$89,009 05	\$88,214 06	\$87,166 21
Bridge Service.....	410,216 53	392,589 05	15,805 42	382,413 98	387,220 23	426,330 81	396,596 57	445,564 07	452,916 60	451,024 62
Boston and Cambridge Bridges.....	26,783 42	27,999 77	2,433 95	27,669 10	30,832 74	31,740 49	19,309 12	18,983 08	16,496 35	15,584 52
Ferry Service.....	574,754 54	496,836 35	21,483 31	497,091 70	498,684 78	523,527 46	472,240 69	516,316 65	552,328 81	558,335 56
Lighting Service.....	722,134 24	722,091 55	134,127 03	734,059 09	747,191 63	830,736 90	820,768 34	927,329 94	953,642 82	977,195 76
Paving Service.....	1,023,332 59	1,110,496 07	34,869 68	925,828 45	1,140,959 74	1,208,503 43	1,240,788 13	2,252,030 79	1,396,279 48	1,567,712 85
Removal of Snow.....	663,111 55	215,399 21	6,611 10	416,720 51	364,713 64	349,375 57	75,494 95	1,234,123 87	786,521 98	313,692 83
Sanitary Service.....	1,508,102 71	*1,629,078 98	105,288 95	1,831,685 38	1,895,984 45	†2,073,913 32	1,877,228 67	2,050,603 65	2,089,907 75	2,087,116 27
Sewer Service.....	616,461 55	607,043 15	25,419 60	567,758 00	605,796 63	635,928 74	592,155 15	688,876 44	699,708 79	688,722 54
Street Cleaning Service.....	700,031 01	640,179 28	23,637 66	627,203 22	607,583 55	592,645 85	719,296 18	696,834 10	740,599 35	790,641 45
Street, Watering and Oiling Service.....	186,763 20	145,454 29	491 24	122,865 88	108,842 33	79,476 90	53,420 88	51,458 88	49,375 06	41,700 49
Water Service.....	1,253,166 33	1,232,418 76	41,656 57	1,354,555 93	1,229,573 73	1,608,320 10	1,309,163 72	1,511,407 58	1,483,018 23	1,598,068 76
Totals.....	\$7,776,231 65	\$7,307,894 48	\$414,896 05	\$7,588,317 47	\$7,702,101 05	\$8,447,000 68	\$7,657,894 67	\$9,382,538 10	\$9,309,009 28	\$9,176,962 86

* Includes \$92,445.71 paid by Street Cleaning and Oiling Service.

† Includes \$142,724.96 paid by Street Cleaning and Oiling Service.

REVENUES, 1928.

On Account of the Public Works Department, as Per Auditor's Statement.

Bridge Service:

Labor and material	\$364 54
Maintenance, Chelsea Bridge . .	127,788 85
Rent	200 00
Sale of junk	65 00

\$128,418 39

Less amount credited in 1927 to
General Revenue should have
been Sinking Fund (Massa-
chusetts Avenue Bridge) .

3,180 00

\$125,238 39

From Commonwealth:

Refund of balance of assessments:

River Street — Brighton

Street Bridge \$375 25

Western Avenue Bridge 424 35

799 60

Ferry Service:

Tolls	\$71,969 14
Rent	747 32
Commission telephones	96 69
Cleaning booths	44 00
Free ferries (July 4)	1 00
Ice cream concession	14 00
Damage to property	5 00
Sale of junk	5 00

72,882 15

Lighting Service:

Lighting Boston and Cambridge

Bridges \$1,328 38

Damage to posts 478 51

Sale of junk 20 00

1,826 89

Paving Service:

From assessments on abutters

for sidewalks \$38,679 92

Permits 30,930 19

Sale of material 4,010 84

Labor and material (chapter 27,

Revised Ordinances, 1925) 3,059 25

Labor and materials furnished . . 8,037 03

Sale of rollers 300 00

Use of roller 30 00

Rent of sign 290 00

Carried forward

\$85,337 23

\$200,747 03

<i>Brought forward</i>	\$85,337 23	\$200,747 03
Repairing signs	59 97	
Refund — electric light bill	4 85	
		85,402 05
Sanitary Service:		
Collection of waste	\$79,196 85	
Sale of manure	2,698 60	
Gasolene	26 13	
Materials	50 00	
Junk	37 00	
Buggy	15 00	
Cart	5 00	
Oiling streets	32 00	
Rebate — auto registration	5 00	
		82,065 58
Sewer Service:		
Pumping sewage	\$11,998 37	
Entrance fees	12,231 45	
Assessments on old sewers	36 93	
Labor and materials, furnished	818 09	
Sale of hay	19 00	
Sale of junk	140 00	
Refund from Edison Electric Illuminating Company	84 95	
Refund on express charges	9 25	
Damage to auto	11 00	
Easement	1 00	
Rent	261 00	
		25,611 04
Water Service:		
Water rates for 1928 and prior years	\$4,099,044 58	
Service pipes	156,816 06	
Labor and materials	5,945 31	
Elevator and fire pipe connections	34,749 24	
Sale of material	5,438 20	
Fees on over due rates	6,078 12	
Shutting off and letting on	322 00	
Interest on deposits	2,371 80	
Testing meters	302 50	
Relocating hydrants	1,817 63	
Damage to hydrants	696 41	
Relocating pipes	194 79	
Installing pipes	282 97	
Damage to pipes (pick holes)	79 43	
Rent	100 00	
Board of horse	550 50	
		4,314,789 54
Total		<u>\$4,708,615 24</u>

CONTRACTS MADE BY THE PUBLIC WORKS DEPARTMENT FROM JANUARY 1, 1928, TO DECEMBER 31,
1928.

Hired Teams.

District.	Awarded to	Dated.	Progress of Work.	Rate Per Day.	Amount Expended in 1928.
¹ Furnishing single teams in District No. 10.	B. E. Grant Company	June 21, 1928.	Completed Dec. 31, 1928.	\$7 00	\$7,943 25

¹ Unadvertised; only bidder.

BRIDGE AND FERRY DIVISION (BRIDGE SERVICE).

Bridge Work.

CONTRACT.	Awarded to	Dated.	Progress of Work.	Contract Estimated.	Amount Expended in 1928.
¹ Furnishing and installing roadway gates at Chelsea Bridge South draw.	Progressive Iron Works, Inc....	Jan. 20, 1928.	Completed March 16, 1928....	\$2,975 00	\$2,975 00
¹ Rebuilding Columbus Avenue Bridge, over the Boston & Albany Railroad, Boston.	Joseph A. Singarella.....	Feb. 27, 1928.	Completed Aug. 27, 1928....	54,725 00	49,775 55
¹ Repairing paving, Warren Bridge, over Charles river,	V. (James) Grande.....	May 28, 1928.	Completed Aug. 3, 1928....	2,470 00	1,715 70
¹ Furnishing and installing two double cylinder reversing engines at Northern Avenue Bridge draw.	The Atlantic Works.....	June 5, 1928.	Completed Aug. 30, 1928....	3,520 00	3,520 00
¹ Repairing Malden Bridge, over Mystic river.....	Walsh & Co.....	June 5, 1928.	Completed Oct. 10, 1928....	36,636 00	47,665 59
¹ Repairing Dorchester Avenue Bridge.....	C. & R. Construction Company.	June 11, 1928.	Completed Oct. 6, 1928....	19,443 00	19,627 26
¹ Repairing paving, Prison Point Bridge, over the Boston & Maine Railroad, Boston.	J. F. Shea & Co.....	Aug. 3, 1928.	Completed Aug. 29, 1928....	1,940 00	1,837 67
¹ Repairing spans 3 and 4, Dover Street Bridge, over Fort Point Channel, Boston.	W. H. Ellis & Son Company..	Aug. 7, 1928.	Unfinished.....	9,875 00	7,091 97
¹ Widening Ashland Street Bridge, over the New York, New Haven & Hartford Railroad, Boston.	A. G. Tonasello & Son, Inc....	Aug. 22, 1928.	Unfinished.....	25,801 00	11,878 75
¹ Rebuilding River Street Bridge, over the Midland Division of the New York, New Haven & Hartford Railroad, Boston.	Phandor Company.....	Sept. 24, 1928.	Unfinished.....	114,297 60	Nothing.
² Repairing steel work, Dover Street Bridge.....	Progressive Iron Works, Inc....	Sept. 29, 1928.	Completed Dec. 14, 1928....	2,825 00	2,787 13
¹ Repairing roadway, Anderson Bridge, over Charles river.	Walsh & Co.....	Oct. 19, 1928.	Completed Nov. 17, 1928....	2,235 00	2,364 28
¹ Repairing fender guards, Meridian Street Bridge.....	W. H. Ellis & Son Company..	Oct. 23, 1928.	Completed Dec. 3, 1928....	1,920 00	1,458 94
¹ Repairing piers, Northern Avenue Bridge, over Fort Point Channel.	Maurice M. Devine.....	Oct. 30, 1928.	Unfinished.....	6,519 50	1,851 40
¹ Repairing fence railings at Northern Avenue Bridge, over Fort Point Channel.	New England Construction and Maintenance Company,	Nov. 9, 1928.	Completed Dec. 29, 1928....	1,602 50	2,278 84

¹ Advertised and awarded to the lowest bidder.² Advertised and awarded to the only bidder.

BRIDGE AND FERRY DIVISION (FERRY SERVICE).
Ferry Work.

CONTRACT.	Awarded to	Dated.	Progress of Work.	Contract Estimated.	Amount Expended in 1928.
¹ Teaming coal to ferries.....	Edward J. McHugh & Son..	Jan. 10, 1928.	Completed Dec. 31, 1928.....	* \$6 00	\$1,878 00
¹ Repairing hull, etc., of ferryboat "John H. Sullivan".	Richard T. Green Company,	Jan. 28, 1928.	Completed March 15, 1928.....	12,575 00	10,780 00
¹ Remodeling canopy of North Ferry, East Boston....	Walter E. MacEachern.....	March 5, 1928.	Completed April 9, 1928.....	1,511 00	1,845 81
¹ Repairing hull, etc., of ferryboat "Ralph J. Palumbo"	The Atlantic Works.....	June 5, 1928.	Completed June 23, 1928.....	8,560 00	9,698 10
¹ Repairing piers, North Ferry.....	The Rendle Corporation.....	June 13, 1928.	Completed Oct. 2, 1928.....	11,740 00	18,268 35
¹ Repairing hull, etc., of ferryboat "General Sumner".	Bethlehem Shipbuilding Corporation, Limited.	Aug. 14, 1928.	Completed Nov. 2, 1928.....	7,709 00	8,278 00
¹ Repairing hull, etc., of ferryboat "Lieutenant Flaherty."	Richard T. Green Company.	Sept. 19, 1928.	Completed Oct. 22, 1928.....	10,630 00	10,259 00
¹ Repairing hull, etc., of ferryboat "Charles C. Donoghue."	Bethlehem Shipbuilding Corporation, Limited.	Nov. 7, 1928.	Completed Nov. 26, 1928.....	6,068 00	4,127 17
¹ Repairing hull, etc., of ferryboat "Daniel A. McCormack."	Richard T. Green Company.	Nov. 26, 1928.	Completed Dec. 28, 1928.....	6,430 00	6,408 15
² Weighing and vending machines in head houses, Boston Ferries.	Autosales Corporation.....	Feb. 1, 1928.	Unfinished.....	1,200 00	400 00

* Per horse per day.

¹ Advertised and awarded to the lowest bidder.² Advertised and awarded to the only bidder.

HIGHWAY DIVISION (LIGHTING SERVICE). Contract in Force Made in Previous Years.

CONTRACT.	Awarded to	Dated.	Progress of Work.	Price Per Gas Lamp Per Year.
¹ Furnishing gas and for the equipment and lighting of gas lamps for a period of ten years, from April 1, 1924, to March 31, 1934, inclusive.	Boston Consolidated Gas Company.....	May 20, 1924.	Unfinished.....	\$11 00

¹ Advertised and awarded to the only bidder.

HIGHWAY DIVISION. Miscellaneous.

CONTRACT.	Awarded to	Dated.	Progress of Work.	Contract Estimated.	Amount Expended in 1928.
² Removing Boston Elevated Column T-95-W in Sullivan square, Ward 2.	Boston Elevated Railway Company.	April 25, 1928.	Completed July 16, 1928...	\$5,071 00	\$5,071 00
¹ Grading in Codman street, Ward 17, from Southern Artery (at Milton avenue) about 260 feet easterly.	M. McGinnis Company.....	Aug. 7, 1928.	Completed Oct. 13, 1928....	1,201 60	1,538 10
¹ Filling in Buckingham street, Ward 4, from Dartmouth street to near Clarendon street.	C. M. Callahan, Inc.....	Sept. 19, 1928.	Completed Oct. 13, 1928...	2,000 00	1,425 00
¹ Artificial stone footway in Charles street footway, Ward 15, from Charles street to Taylor terrace.	D. M. Biggs & Co.....	Nov. 7, 1928.	Unfinished.....	2,448 00	Nothing.
¹ Removing trees and stumps in Walk Hill street (northerly side), Ward 14, from Wellington Hill Footway to Harvard street.	Dell Construction Company..	Nov. 8, 1928.	Unfinished.....	700 00	Nothing.
² Installing caissons, etc., for and moving Samuel Adams monument from Adams square to Dock square.	Gow Company, Inc.....	Nov. 17, 1928.	Unfinished.....	1,500 00	Nothing.

¹ Advertised and awarded to the lowest bidder.

² Only bid; not advertised.

Removing Snow and Ice.

District.	Contractor.	Dated.	Progress of Work.	Price Per Cubic Yard.	Amount Expended in 1928.
District No. 1.....	Hugh Nawn, Inc.....	Dec. 20, 1928.	Unfinished.....	\$0.48	Nothing.
District No. 2.....	Coleman Brothers, Inc.....	Dec. 17, 1928.	Unfinished.....	.50	Nothing.
District No. 3.....	John J. Grant.....	Dec. 17, 1928.	Unfinished.....	.55	Nothing.
District No. 4.....	John J. Grant.....	Dec. 17, 1928.	Unfinished.....	.54	Nothing.
District No. 5.....	Joseph P. McCabe.....	Dec. 20, 1928.	Unfinished.....	.49	Nothing.
District No. 6.....	A. G. Tomasello & Son, Inc.....	Dec. 18, 1928.	Unfinished.....	.70	Nothing.
District No. 7.....	C. M. Callahan, Inc.....	Dec. 17, 1928.	Unfinished.....	.50	Nothing.
District No. 8.....	Joseph B. O'Rourke.....	Dec. 17, 1928.	Unfinished.....	.55	Nothing.
District No. 9.....	Thomas Joseph McCue.....	Dec. 17, 1928.	Unfinished.....	.45	Nothing.
District No. 10.....	Coleman Brothers, Inc.....	Dec. 17, 1928.	Unfinished.....	.43	Nothing.
District No. 11.....	Coleman Brothers, Inc.....	Dec. 17, 1928.	Unfinished.....	.45	Nothing.
District No. 12.....	David W. Norton.....	Dec. 17, 1928.	Unfinished.....	.48	Nothing.

SANITARY DIVISION (SANITARY SERVICE).
Collecting and Removing Ashes, Store Dirt, House Dirt, Refuse and Garbage.

District.	Awarded to	Dated.	Progress of Work.	Bid Per Month.	Amount Expended in 1928.
¹ East Boston.....	Montrose Construction Company.	Dec. 23, 1928.	Completed Dec. 31, 1928. . .	\$3,850 00	\$46,200 00
¹ Brighton.....	Edward J. Byrne.....	Dec. 14, 1928.	Completed Dec. 31, 1928. . .	6,500 00	78,000 00
² West Roxbury.....	John J. Moore Company.....	Dec. 14, 1928.	Completed Dec. 31, 1928. . .	4,390 65	52,687 80
¹ Dorchester.....	Coleman Brothers, Inc.....	Dec. 14, 1928.	Completed Dec. 31, 1928. . .	17,800 00	213,600 00
¹ Hyde Park.....	William F. Cuddy.....	Dec. 14, 1928.	Completed Dec. 31, 1928. . .	1,200 00	14,400 00

¹ Advertised and awarded to the lowest bidder.

² Advertised and awarded to the third bidder.

Contract in Force Made in Previous Years.

CONTRACT.	Awarded to	Dated.	Progress of Work.	Bid Per Year.	Amount Expended in 1928.
¹ Disposal of garbage and refuse for ten years, from July 1, 1922, to July 1, 1932.	Coleman Brothers, Inc.....	Dec. 31, 1921.	Unfinished.....	\$345,000 00	\$345,000 00

¹ Advertised and awarded to the lowest bidder.

SANITARY DIVISION (SANITARY SERVICE).
Miscellaneous.

CONTRACT.	Awarded to.	Dated.	Progress of Work.	Estimated Cost.	Amount Expended in 1928.
³ Removing manure from the stables and yards in the various divisions of the department.	Joseph A. Kelley.....	Dec. 14, 1927.	Completed Dec. 31, 1928....	* \$8 05	
² Furnishing combination motor street sprinkling and flushing trucks.	B. E. Grant Company.....	May 24, 1928.	Completed Oct. 1, 1928....	† 34 00	\$29,240 00
¹ Repairing garbage dump station, at South street.....	Walsh & Co.....	Nov. 21, 1928.	Unfinished.....	1,600 00	Nothing.

¹ Advertised and awarded to the lowest bidder.

² Advertised and awarded to the only bidder.

³ Advertised and awarded to the higher bidder.

* Per horse per year; paid to city.

† Per day

WATER DIVISION (WATER SERVICE).
Laying and Relaying Water Pipes.

CONTRACT.	Awarded to	Dated.	Progress of Work.	Contract Estimated.	Amount Expended in 1928.
¹ Ashland street, West Roxbury, and Oakland street, Dorchester.	A. Grande.....	April 18, 1928.	Completed Aug. 24, 1928....	\$13,903 50	\$12,701 44
¹ Harrison avenue, between East Concord and Randolph streets, city proper.	C. Russo.....	April 23, 1928.	Completed June 21, 1928....	6,475 25	6,058 56
¹ Corey road and Summit avenue, Brighton; Dyer avenue and Jacob street, Dorchester; Rook road, Hyde Park; Beech street, Cedar street, Clarendon avenue, Eunous road, Freeman avenue, Howitt road, Overlook road, Stedman street, Swan street, Thurlow street, West Roxbury.	M. DeSisto Company.....	April 25, 1928.	Completed July 11, 1928....	5,982 00	6,103 38
¹ Beecher street, West Roxbury; Brunswick street, Roxbury; Auckland street, Allendale street, Carliotta street, Humes road, Oldfield street and Southview street, Dorchester.	C. Russo.....	May 7, 1928.	Completed June 30, 1928....	4,408 25	4,075 37
² Long Island, Boston Harbor.....	C. M. Callahan, Inc.....	May 17, 1928.	Completed June 10, 1928....	3,300 00	3,300 00
¹ Albertia road, Allen road, Lake street, Langley road, and Oakland avenue, Brighton; Bates street, Glenvale terrace, Porter terrace, West Roxbury, and Greenwood Circle, Hyde Park.	A. Piatelli.....	May 22, 1928.	Completed July 18, 1928....	3,250 00	3,708 45
¹ Cambridge street, Brighton; Cushing street and Earnshaw street, West Roxbury.	East Boston Contracting Company.	June 15, 1928.	Completed Aug. 4, 1928....	1,730 00	2,178 98
¹ Logan street, Roxbury.....	Zoppo & Civitarese.....	June 23, 1928.	Completed July 28, 1928....	2,080 30	1,319 10

¹ Advertised and awarded to the lowest bidder ² Only bidder; not advertised.

Laying and Relaying Water Pipes.—Concluded.

CONTRACT.	Awarded to	Dated.	Progress of Work.	Contract Estimated.	Amount Expended in 1928.
¹ Avondale street, Hildreth street, St. Gregory street, Washington street, Dorchester; Guernsey street and Potomac street, West Roxbury.	L. P. Federico & Co.....	June 25, 1928.	Completed Aug. 1, 1928....	\$2,641 25	\$2,810 96
² Harriet street, Hobart street, Madeline street and Oakland street, Brighton; Arborway terrace, Barlow street, Buchanan road, Forest Hills Circle, Pitsmoor road, Powell street and Quarley road, West Roxbury, and Favre street, Dorchester.	C. Russo.....	June 27, 1928.	Completed Aug. 13, 1928....	4,931 25	5,425 63
¹ Ashland street, Beach street, Everett street and Mill street, Dorchester.	John Williams.....	July 3, 1928.	Completed Sept. 10, 1928....	5,923 10	5,089 35
¹ Ashley street, East Boston; Hanover street and Hudson street, city proper.	Joseph Capone.....	July 27, 1928.	Unfinished.....	6,927 50	4,324 34
¹ Dedham street, Hyde Park; Goodenough street and St. Paul street, Brighton; Bremen terrace and Orchard avenue, West Roxbury; Greendale road and Truxton street, Dorchester.	A. Piatelli.....	Aug. 7, 1928.	Completed Sept. 15, 1928....	2,865 00	2,338 19
¹ Ashton street, Columbine street, Greenfield street and Hollingsworth street, Dorchester; Orchard street, Hyde Park; Atlantis street, Bogandale road, Charmie avenue and Hodgdon terrace, West Roxbury.	L. P. Federico & R. Susi Company.	Aug. 22, 1928.	Completed Oct. 2, 1928....	3,122 50	4,153 05
¹ Morton street, between Druid street and Washington street, Dorchester.	John Williams.....	Aug. 28, 1928.	Completed Nov. 7, 1928....	5,417 00	5,690 93
¹ Branton street, Olney street, Pasadena road, Mt. Vernon street, Old Colony avenue, Southern Artery, Woodfield street, Dorchester.	John Williams.....	Sept. 8, 1928.	Completed Nov. 15, 1928....	5,638 50	4,674 48
¹ Chiswick road, (West), Cresthill road, Brighton; Hemman street and Keyen circle, West Roxbury.	East Boston Contracting Company.	Sept. 20, 1928.	Completed Nov. 17, 1928....	2,557 50	3,313 16

¹ Keith street, Parkvale road, Whipple avenue, Winslow street, West Roxbury, and Hurlcroft road, Dorchester.	Charles Struzziery.....	Oct.	19, 1928.	Completed Nov. 23, 1928....	1,923 75	1,239 84
¹ Arbroth street, Laban Pratt road, Murray terrace, Oakton avenue, Dorchester, and Holworthy street, Roxbury.	M. Desiato Company.....	Nov.	5, 1928.	Unfinished.....	5,106 50	Nothing.
¹ Alder street, Brookside avenue, Mosbaka street, Rocky Nook terrace, West Roxbury, and Strathmore road, Brighton.	Joseph Capone.....	Nov.	5, 1928.	Unfinished.....	1,862 00	1,303 35
¹ Edwards street, Eliot street, Wood avenue, Hyde Park; Baker street and Hyde Park avenue, West Roxbury.	C. Russo.....	Nov.	14, 1928.	Unfinished.....	3,792 25	1,335 95
¹ Eastwood circuit, Leland street, Martin street, Oakmere street, West Roxbury; Ruth road, Brighton, and Sunnyside street, Hyde Park.	A. Piatelli.....	Dec.	20, 1928.	Unfinished.....	2,072 50	Nothing.

¹ Advertised and awarded to the lowest bidder.² Advertised and awarded to the only bidder.

Miscellaneous.

CONTRACT.	Awarded to.	Dated.	Progress of Work.	Contract Estimated.	Amount Expended in 1928.
² Assembling 50 B. & F. post hydrants.....	McCulloch Manufacturing Company.	Jan. 20, 1928.	Completed April 24, 1928. .	\$4,787 50	\$5,170 50
¹ Assembling 100 six-inch gates.....	McCulloch Manufacturing Company.	Jan. 20, 1928.	Completed Nov. 17, 1928. .	1,350 00	1,451 00
³ Furnishing in place reinforced concrete around 48 inch steel water pipe in Arlington square tunnel.	C. & R. Construction Company.	Feb. 4, 1928.	Completed April 14 1928. . .	13,000 00	14,346 50
¹ Assembling 150 eight-inch gate valves.....	McCulloch Manufacturing Company.	Mar. 30, 1928.	Completed June 27, 1928. .	2,175 00	2,218 50
¹ Setting hydrant, gate, blow-off and meter boxes to replace existing boxes in city proper, South Boston and Roxbury.	B. & B. Company.....	May 1, 1928.	Completed July 18, 1928. .	2,500 00	2,650 00
¹ Assembling 50 B. & F. post hydrants.....	McCulloch Manufacturing Company.	June 21, 1928.	Completed Aug. 11, 1928. .	4,787 50	5,457 75
¹ Setting about 500 concrete meter boxes with iron frames and covers in Roxbury and Dorchester.	S. Crowley Company.....	July 9, 1928.	Completed Nov. 28, 1928. .	8,575 00	7,194 82
³ Laying and connecting water pipes at west head on Long Island, Boston Harbor.	C. M. Callahan, Inc.....	July 26, 1928.	Completed Sept. 7, 1928. .	2,400 00	2,400 00
¹ Furnishing and laying 24-inch steel water pipe and laying 24-inch and 20-inch cast iron water pipe on Columbus avenue bridge.	C. & R. Construction Company.	Aug. 7, 1928.	Completed Nov. 17, 1928. .	7,850 00	5,816 55
² Assembling 100 six-inch gate valves.....	McCulloch Manufacturing Company.	Sept. 8, 1928.	Unfinished.....	1,350 00	Nothing.
² Assembling about 50 B. & F. post hydrants.....	McCulloch Manufacturing Company.	Nov. 7, 1928.	Unfinished.....	4,687 50	Nothing.
³ Restoring road and sidewalk under guaranty, damage by break in 12-inch water pipe in Washington street, between Union Park and Waltham streets, city proper.	J. C. Coleman & Sons Company.	Sept. 11, 1928.	Completed Nov. 1, 1928. .	1,300 00	1,217 20
³ Repairing sheet asphalt pavement where water pipes were relaid in Hudson street, between Kneeland and Beach streets, city proper.	M. F. Gaddis.....	Nov. 14, 1928.	Completed Dec. 31, 1928. .	1,300 00	1,302 90

¹ Advertised and awarded to the lowest bidder.² Advertised and awarded to the only bidder.³ Only bidder; not advertised.

Area of Pavements.
Area in Square Yards and Character of Pavements on Accepted Streets January 1, 1929.

District.	Sheet Asphalt.	Asphalt Concrete.	Granite Block.	Wood Block.	Plank on Bridges.	Brick.	Concrete.	Macadam.	Gravel.	Not Graded.	Totals.
Year 1927 report	1,079,369	1,563,992	2,680,662	226,997	25,126	69,697	139,055	5,563,377	420,564	142,005	11,919,844
Per cent.	9.06	13.12	22.57	1.90	0.21	0.58	1.17	46.67	3.53	1.19	100.00
January 1, 1929.											
City Proper.	446,180	355,671	852,019	119,730	5,136	11,265	6,024	249,940	337	14,267	2,060,569
Charlestown.	7,150	7,507	257,611	2,622	2,112	756	18,751	151,127	.....	.....	447,636
East Boston.	58,533	39,107	147,907	187	1,422	771	.....	441,024	8,048	865	697,864
South Boston.	47,442	57,691	418,731	13,457	5,599	3,068	.....	361,735	12,859	40,103	960,685
Roxbury.	251,482	194,411	409,167	22,703	1,022	5,807	15,288	753,280	19,500	986	1,673,646
West Roxbury.	160,160	345,418	172,593	417	1,471	.....	27,820	1,105,497	44,406	21,355	1,879,137
Dorchester.	162,957	345,780	290,118	45,908	2,527	23,969	31,903	1,590,215	64,247	14,436	2,572,060
Brighton.	145,352	259,190	98,867	4,080	1,696	17	41,453	495,221	55,235	4,333	1,105,444
Hlyde Park.	2,538	56,004	13,029	2,212	2,839	.....	.....	323,840	206,051	12,527	619,040
Totals.	*1,281,794	†1,660,779	‡2,660,042	211,316	23,824	45,653	\$141,239	‡5,471,879	410,683	108,872	12,016,081
Per cent.	10.67	13.82	22.14	1.76	0.20	0.38	1.17	45.54	3.42	0.90	100.00

NOTE.—In the above table the city is subdivided substantially on the boundary lines between the districts as they existed when annexed to Boston. Territory annexed from Brookline is included in city proper.

* Of this amount 1,923 square yards is Bitulock, and 1,333 square yards is Kyrock, and 470 square yards is Unionite, and 114 square yards is rubber.

† Of this amount 771 square yards is asphalt block, and 137,895 square yards is asphalt concrete, and 1,230,383 square yards is bitulithic, and 959 square yards is Fibertine, and 22,072 square yards is Sinasco, and 268,484 square yards is Topeka, and 215 square yards is Carey Elastite paving.

‡ Of this amount 946 square yards is cobble, and 1,687,202 square yards is granite block paving on concrete base.

§ Of this amount 2,552,722 square yards is Blome Granitoid concrete blocked pavement.

|| Of this amount 2,552,722 square yards is bituminous macadam.

33,022 square yards public alleys included in this table.

301,297 square yards public streets in charge of Park Department included in this table.

71,345 square yards public streets in charge of Commonwealth of Massachusetts included in this table.

on to this table there are 7,031 square yards of accepted footways.

Length of Pavements.

Length in Miles and Character of Pavements on Accepted Streets, January 1, 1929.

District.	Sheet Asphalt.	Asphalt Concrete.	Granite Block.	Wood Block.	Plank on Bridges.	Brick.	Concrete.	Macadam.	Gravel.	Not Graded.	Totals.
Year 1927 report.....	60.98	74.05	102.38	10.04	1.16	3.35	7.98	335.62	27.50	2.80	625.86
Per cent.....	9.74	11.83	16.36	1.60	0.19	0.53	1.28	53.63	4.39	0.45	100.00
January 1, 1929.											
City Proper.....	24.42	15.45	35.48	5.25	0.21	0.49	0.69	14.34	0.07	0.23	96.63
Charlestown.....	0.47	0.33	11.06	0.11	0.08	0.03	0.78	10.54	.....	.....	23.40
East Boston.....	2.65	1.49	6.59	0.01	0.10	0.04	.....	22.02	0.44	0.04	33.38
South Boston.....	3.41	2.60	17.31	0.78	0.25	0.13	.....	19.52	0.69	1.46	46.15
Roxbury.....	14.27	9.80	15.32	1.03	0.04	0.28	0.72	48.81	1.47	0.05	91.82
West Roxbury.....	10.12	17.50	3.66	0.02	0.07	.....	1.83	71.58	2.72	0.32	107.82
Dorchester.....	9.80	17.02	10.84	1.87	0.13	1.07	1.86	96.49	3.98	0.14	143.20
Brighton.....	6.06	12.27	0.91	0.11	0.10	.....	2.22	28.42	3.63	.....	53.72
Hyde Park.....	0.15	2.52	0.08	0.13	0.16	.....	.....	18.71	13.46	0.24	35.45
Totals.....	* 71.35	† 78.98	† 101.25	9.31	1.14	2.04	\$ 8.10	‡ 330.46	26.46	2.48	631.57
Per cent.....	11.30	12.51	16.03	1.48	0.18	0.32	1.28	52.32	4.19	0.39	100.00

NOTE.— In the above table the city is subdivided substantially on the boundary lines between the districts as they existed when annexed to Boston. Territory annexed from Brookline is included in city proper.

† Of this amount 0.18 mile is Biturock; 0.08 mile is Kyrook; 0.02 mile is Unionite and 0.00 mile is rubber.

‡ Of this amount 0.02 mile is asphalt block; 6.47 miles is asphalt concrete; 57.08 miles is bitulithic; 0.06 mile is Filbertine; 1.28 miles is Sinasco; 14.07 miles is Topeka and 0.00 mile is Carey Elastite Paving.

§ Of this amount 0.04 mile is cobble and 55.37 mile is granite block paving on concrete base.

|| Of this amount 0.06 mile is Blome Granitoid concrete blocked pavement.

¶ Of this amount 146.12 miles is bituminous macadam.

6.28 miles public alleys included in this table.

7.24 miles public streets in charge of Park Department included in this table.

2.28 miles public streets in charge of Commonwealth of Massachusetts included in this table.

In addition to this table there are 1.36 miles of accepted footways.

The following changes were made in pavement during the year 1928:

0.10 mile or 1,292 square yards sheet asphalt changed to bitulithic.
 0.04 mile or 300 square yards sheet asphalt changed to granite blocks.
 0.05 mile or 679 square yards sheet asphalt changed to concrete.
 0.11 mile or 1,916 square yards bitulithic changed to sheet asphalt.
 0.01 mile or 323 square yards bitulithic changed to granite block.
 0.00 mile or 36 square yards bitulithic changed to concrete.
 0.72 mile or 11,325 square yards Topeka changed to sheet asphalt.
 0.01 mile or 271 square yards Topeka changed to bitulithic.
 0.04 mile or 2,920 square yards asphalt concrete changed to sheet asphalt.
 1.22 miles or 40,923 square yards granite block changed to sheet asphalt.
 0.35 mile or 8,256 square yards granite blocks changed to bitulithic.
 0.00 mile or 7 square yards granite blocks changed to concrete.
 0.50 mile or 9,030 square yards wood block changed to sheet asphalt.
 0.12 mile or 3,499 square yards wood block changed to bitulithic.
 0.00 mile or 304 square yards wood block changed to granite block.
 0.10 mile or 1,445 square yards wood block changed to concrete.
 0.02 mile or 371 square yards plank on bridges changed to sheet asphalt.
 0.02 mile or 931 square yards plank on bridges changed to granite block.
 1.22 miles or 23,772 square yards of brick changed to sheet asphalt.
 0.04 mile or 836 square yards concrete changed to sheet asphalt.
 2.63 miles or 43,296 square yards macadam changed to sheet asphalt.
 2.67 miles or 48,351 square yards macadam changed to bitulithic.
 0.33 mile or 8,733 square yards macadam changed to granite block.
 0.02 mile or 354 square yards macadam changed to concrete.
 2.56 miles or 42,674 square yards gravel changed to sheet asphalt.
 1.45 miles or 17,673 square yards gravel changed to bitulithic.
 0.00 mile or 36 square yards gravel changed to granite block.
 0.35 mile or 5,274 square yards gravel changed to macadam.
 0.32 mile or 9,742 square yards not graded changed to sheet asphalt.
 0.00 mile or 17,875 square yards not graded changed to bitulithic.
 0.00 mile or 7,272 square yards not graded changed to granite block.
 0.00 mile or 695 square yards not graded changed to macadam.
 0.00 mile or 717 square yards not graded changed to gravel.

EMPLOYEES.

The following tables show the number of requisitions made on the Civil Service Commission for men; the number appointed, reinstated, died, resigned, transferred and retired; also the grade and number of employees in the department:

Requisitions made on the Civil Service Commission .	49
Number of men called	122
Number of men certified	255
Number of men appointed	113
Promotions allowed	46
Reinstatements allowed	* 17
Number of men resigned	22
Number of men died	58
Number retired under the Veterans' Retirement Act .	3

* Fourteen on eligible list January 1, 1928.

Number retired under the Boston Retirement Act	65
Number of transfers to other departments	8
Number of transfers from other departments	24
Number of men discharged	6

The records of the department show that there are now 3,030 persons eligible for employment in the several divisions and of that number 2,947 were upon the January, 1929, pay rolls.

Grade and Number of Employees.

TITLE.	SERVICES.									
	Central Office.	Paving.	Sewer.	Sanitary.	Street Cleaning.	Ferry.	Bridge.	Lighting.	Water.	Total.
Commissioner.....	1									1
Division engineers.....		1	1				1		1	4
Engineers in charge.....		1							1	2
Chief clerk.....	1									1
Clerks.....	39	20	11	2	2	1	2	1	44	122
Assistant engineers (civil).....		15	25	1			8		5	54
Draughtsmen.....		2	12				5		2	21
Instrumentmen.....		15	24				4		7	50
Rodmen.....		2	4				2			8
Inspectors.....	1	35	45	51	29		3	1	29	194
Foremen.....		11	5	10	9		1		12	48
Subforemen.....		22					3			25
Address printers.....									3	3
Blacksmiths and assistants.....		9	3	21					5	38
Blueprinters.....	2									2
Chauffeurs-teamsters.....	1	32	19	66	24		3		14	159
Carpenters and assistants.....		17	3	7		4	15		6	52
Chief inspectors.....		1			1				1	3
Cement testers and assistants.....	2									2
Chemists and assistants.....		2								2
Coal passers.....			2							2
Cashiers.....						1				1
Drawtenders and assistants.....							133			133
<i>Carried forward.....</i>	47	185	154	158	65	6	180	2	130	927

Grade and Number of Employees.— Continued.

TITLE.	SERVICES.									
	Central Office.	Paving.	Sewer.	Sanitary.	Street Cleaning.	Ferry.	Bridge.	Lighting.	Water.	Total.
<i>Brought forward</i>	47	185	154	158	65	6	180	2	130	927
Deckhands.....						26				26
Engineers (steam).....		12	5			12				29
Electricians.....			3			1	1			5
Feeders.....		1		5						6
Firemen.....		8	15			29				52
Gate-men.....			4			16				20
General foremen.....		2	1		1	1			2	7
Harnessmakers and assistants.....				9						9
Head chauffeurs.....		4								4
Horseshoers.....				8						8
Janitor.....						1				1
Matrons.....						7				7
Joiners.....						2				2
Laborers.....		328	79		110	13	6		170	706
Lamplighter.....						1				1
Machinist and assistants.....			6			9	1		20	36
Meter testers.....									8	8
Meter readers.....									30	30
Masons (stone and brick).....			9	1					2	12
Medical inspectors.....		1		1	1					3
Oilers.....			14			17				31
Pipe fitters and repairers.....						2			16	18
Pavers.....		74	1						3	78
Plumbers.....									20	20
Painters.....		3	1	11		3	3			21
Captains.....						12				12
Quartermasters.....						12				12
Repairers.....		19	1						94	114
Roofer.....						1				1
Rammers.....		9								9
Rigger.....			1			1				2
Sealers.....									3	3
<i>Carried forward</i>	47	646	294	193	177	172	191	2	498	2,220

Grade and Number of Employees.—Concluded.

TITLE.	SERVICES.									
	Central Office.	Paving.	Sewer.	Sanitary.	Street Cleaning.	Ferry.	Bridge.	Lighting.	Water.	Total.
<i>Brought forward</i>	47	646	294	193	177	172	191	2	498	2,220
Sewer flushers.....			22							22
Supervisors and deputy.....		1		1	1		1			4
Stenographers.....		1	1							2
Stonecutters.....		10	2							12
Superintendents and deputy.....		1	1						2	4
Stockkeepers.....				1		1			1	3
Stableman.....		11	3	23	19		1		1	58
Teamsters and helpers.....		63	1	342	203				6	615
Telephone operators.....					1				1	2
Tollmen.....						13				13
Chief veterinarian.....		1								1
Watchman.....		1	9	12	4		2		6	34
Weighers.....		1		1						2
Wharfingers.....				2						2
Wharfmen.....				4						4
Wheelwrights and assistants.....				6						6
Yardmen.....		5	2	10	2				7	26
Totals.....	47	741	335	595	407	186	195	2	522	3,030

Number of Employees Actually Employed January 1, 1928, and January 1, 1929.

	Central Office.	Bridge.	Ferry.	Lighting.	Paving.	Sanitary.	Sewer.	Street Cleaning, and Watering.	Water.	Total.
January 1, 1928.....	38	191	183	2	710	596	318	413	527	2,978
January 1, 1929.....	39	192	182	2	728	574	329	385	516	2,947

<i>Total Eligible Force.</i>										
January 1, 1928.....	47	192	185	2	725	619	325	430	527	3,052
January 1, 1929.....	47	195	186	2	741	595	335	407	522	3,030

Appointments, Transfers, Resignations, Retirements, Deaths, etc., of Employees.

Died.	Retired, Act of 1922.	Retired Veterans, Act of 1911.	Transferred to Other Depart- ments.	Transferred to Other Services.	Discharged.	Resigned.	January 1, 1928.	SERVICES. 1928-1929.	January 1, 1929.	Transferred from Other Services.	Transferred from Other Depart- ments.	Reinstated.	Appointed.
1	.....	.....	1	1	...	1	47	Central Office.....	* 47	.....	1	.....	3
.....	3	.....	1	1	...	3	192	Bridge.....	195	1	3	.....	7
.....	5	2	1	3	1	...	185	Ferry.....	186	1	1	.....	11
.....	1	.....	.....	.....	.....	.....	2	Lighting.....	2	1	.....	.....	.....
22	22	1	4	12	1	5	725	Paving.....	741	25	8	1	49
15	7	.....	.....	21	2	5	619	Sanitary.....	595	14	4	1	7
10	13	.....	.....	13	...	1	430	Street Cleaning.....	407	12	1	.....	1
7	3	.....	.....	10	1	3	325	Sewer.....	335	3	5	.....	26
3	11	.....	1	4	1	4	527	Water.....	522	8	1	.....	9
58	65	3	8	65	6	22	3,052	Totals.....	3,030	65	24	3	113

* Includes eight Central Office employees who are paid on Water Service pay roll.

PART II.
APPENDICES.

APPENDIX A.

CENTRAL OFFICE.

Appropriation	\$90,047 20
Transfers	2,880 99
	\$87,166 21
Expenditures from January 1, 1928, to December 31, 1928	<u>87,166 21</u>

Expenditures.

Salary, Commissioner	\$9,000 00
Salaries of clerks, stenographers, etc.	71,870 43
Automobile expenses:	
Wages of chauffeur	\$1,721 50
Repairs, etc.	525 06
Gasolene and oil	354 85
Tires and tubes	230 66
Supplies	66 16
Registration	7 50
	2,905 73
Printing	1,569 62
Stationery	775 62
Postage	475 05
Telephone tolls	36 00
Travel	41 36
Books, papers and office supplies	287 45
Typewriter	104 00
Directories	52 00
Premium on bonds	10 00
Sundries	38 95
	<u>\$87,166 21</u>

APPENDIX B.

REPORT OF THE DIVISION ENGINEER OF
THE BRIDGE AND FERRY DIVISION.

BOSTON, January 1, 1929.

MR. JAMES H. SULLIVAN,
Commissioner of Public Works.

DEAR SIR,— I respectfully submit the following report of the income, expenditures and operation of the Bridge and Ferry Division for the year ending December 31, 1928. The expenditures of the division in the regular maintenance appropriations of the department were \$1,024,944.70. Under a number of special appropriations \$338,436.28 were expended, making the total expenditure for the year \$1,363,380.98.

The more important works undertaken during the past year in the Bridge Service were the widening of Ashland Street Bridge, over the New York, New Haven & Hartford Railroad, and the rebuilding of Columbus Avenue Bridge, over the New York, New Haven & Hartford Railroad.

As noted in the reports for some years past, Congress Street Bridge is in very bad condition and should be rebuilt at once. Chapter 157 of the Acts 1926 authorized the borrowing of \$800,000 outside the debt limit for this work and the act has been accepted by the city.

The pile approaches to the draw span of Chelsea Bridge over the North channel of the Mystic river are steadily deteriorating and should be rebuilt, preferably with a steel superstructure on masonry piers.

In connection with the widening of River street, a contract was let for the rebuilding of the bridge and its approaches but owing to legal technicalities the work has been delayed. This trouble should be remedied as soon as possible and the work of reconstruction carried forward.

In connection with the widening of Morton street, an appropriation should be made for the widening of the bridge over the New York, New Haven & Hartford Railroad.

Albany Street Bridge, over the passenger tracks of the Boston & Albany Railroad and Shawmut Avenue Bridge, over the tracks of the New York, New Haven & Hartford Railroad and the Boston & Albany Railroad, are both deteriorating from rapid corrosion, and should be rebuilt.

In the Ferry Service two new boats should be provided in place of the old wooden vessels, which are unfit for traffic and the two old wooden ferry bridges should also be replaced by modern electrically operated steel bridges.

Ashland Street Bridge.

August 22, 1928, a contract was approved with the A. G. Tomasello and Son Company for the widening of this bridge. The bridge is of deck plate girder type with slab floor and granite block paving. The northerly side was widened 4 feet and the southerly side 6 feet. The abutments were extended to accommodate the widening and a retaining wall was built from the parapet on the northeasterly side to the corner at Hyde Park avenue. Water, gas and other services were relocated on the bridge.

The estimated cost based on the contractor's bid is \$25,801. The work will be completed early in 1929.

Chelsea Bridge South.

January 20, 1929, a contract was approved with the Progressive Iron Works, Inc., to fabricate and erect four roadway gates with bumper posts, latches, counterweights at this bridge.

The work was completed March 16, 1928, at a cost of \$2,975.

Columbus Avenue Bridge, Over Boston & Albany Railroad.

February 27, 1928, a contract was approved with J. A. Singarella for rebuilding this bridge; a new steel and concrete superstructure was built on the existing abutments and pier replacing the old superstructure which was in bad condition due to corrosion. The old pipe bridge was removed and the pipes relocated on the new bridge.

The new bridge is of through plate girder type with two roadways and two sidewalks.

The roadway is of reinforced concrete slab construction, waterproofed, with granite block paving. The sidewalks are granolithic.

All steel below the floor is covered with concrete and protected over the center line of railroad tracks by cast-iron blast plates.

A clearance of 15.40 feet between the under surface of the bridge and the top of rail was provided.

The work was completed August 28, 1928, at a contract cost of \$59,775.55.

*Cottage Farm Bridge at Commonwealth Avenue,
Over Boston & Albany Railroad.*

A contract was approved May 14, 1928, with Maurice M. Devine for repairing this bridge.

All loose concrete on the under side of the jack arches and I-beams of the bridge was removed. Steel reinforcing rods were then placed on the cleaned surfaces of the I-beams and the whole surface of the ceiling covered with gunite about one inch in thickness. The work under this contract was completed July 25, 1928, at a cost of \$4,832.90. August 29 a second contract was approved with Maurice M. Devine for completing this work as it had been found that more area of the ceiling needed repairs than had been anticipated. The work under this second contract was completed September 30 at a cost of \$4,887.25.

This work was done under the supervision of this division for the Park Department.

*Dorchester Avenue Bridge, Over Fort Point
Channel.*

The C. & R. Construction Company was awarded a contract for repairing the fender pier, wharves and draw span supports of this bridge. New rails, ties and track stringers were provided where necessary on the draw foundations and both retractile draws adjusted to line and grade. This work was completed October 6, 1928, at a contract cost of \$19,443.

Dover Street Bridge, Over Fort Point Channel.

August 7, 1928, a contract was approved with W. H. Ellis & Son Company for rebuilding the roadway flooring and sidewalks of spans 3 and 4 of this bridge. The entire paving, planking, curb sticks and sidewalks were rebuilt.

The roadway was rebuilt with new wooden riders, planking and waterproofing similar to the old. The granite blocks of the paving were recut and relaid. The old wooden sidewalks were replaced with concrete.

The work was completed January 5, 1929, at a contract cost of \$9,954.34.

In connection with the above-mentioned work it was found that the steel work of these spans was in a badly rusted condition. The Boston Elevated Railway Company repaired the roadway floor beams with new flange angles, flange plates and new rivets where required.

A contract was approved September 29, 1928, with the Progressive Iron Works, Inc., for similar repairs to the steel fascia beams, sidewalk brackets and post connections of these spans. This part of the work was completed December 14, 1928, at a contract cost of \$2,825.

Malden Bridge, over Mystic River.

Walsh & Co. repaired Charlestown approach of the Malden Bridge under contract approved June 5, 1928. Unsound piles were posted or scabbed. New stringers, girder caps, braces, roadway and sidewalk planking, curb sticks were placed in the structure where necessary. The mastic sidewalks were replaced with granolithic and the granite block paving was recut and relaid on a mastic base with asphalt joints. This work was completed October 10, 1928, at a cost of \$47,665.59.

Market Street Bridge, Brighton, over Boston & Albany Railroad.

This bridge, which was maintained by the Boston & Albany Railroad, was an old steel structure with a wooden floor.

The railroad company rebuilt this structure with steel deck girders encased in concrete, with concrete floor and an asphalt wearing surface on the roadway and granolithic surface on the sidewalks.

The new bridge is a much better structure than the old one.

Meridian Street Bridge, East Boston.

October 28, 1928, a contract was approved with W. H. Ellis & Son Company, for repairing the fender guard of this bridge, the repairs being chiefly on the easterly side of the channel. New piling was placed

where required. New caps, bracing, waling and corner irons. This work was completed December 3, 1928, at a contract cost of \$1,716.40.

Northern Avenue Bridge.

A contract was approved June 5, 1928, with the Atlantic Works for the removal of the operating engine and its piping. Two new double cylinder link motion reversing engines were installed and connected with the driving mechanism of the bridge. This work was completed August 30, 1928, at a contract price of \$3,520.

October 30, 1928, a contract was approved with Maurice M. Devine for pointing the granite masonry piers. The joints were raked out and all void spaces filled with mortar. A guniting machine was used on this work. The work will be completed early in 1929.

Under a contract approved August 9, with the New England Construction & Maintenance Company, railings of this bridge were repaired by replacing such parts of pipe, paling, bars, posts, bolts, etc., as were necessary to put them in good condition. This work was completed December 29, 1928, at a contract cost of \$1,602.50.

Prison Point Bridge.

August 3, 1928, a contract was approved with John F. Shea & Co. for repairing the paving on this bridge. The roadway pavement was relaid with mastic joints on the Charlestown approach for a distance of about two hundred feet from the draw crack. This work was completed August 29, 1928, at a contract cost of \$1,837.67.

Warren Bridge, over Charles River.

May 28, 1928, a contract was approved with V. (James) Grande, for repairing the paving on the approaches to the draw of this bridge. The granite block pavement along the rails was relaid with mastic joints for a width of about 3 feet to correct settlement along the rails. This work was completed August 3, 1928, at a contract cost of \$1,715.70.

Miscellaneous.

In connection with some other important maintenance work the entire wooden floor of Chelsea Street Bridge,

over Chelsea creek, was renewed and some new piles driven near the draw crack on the Chelsea side of the channel.

The entire wooden floor of Freeport Street Bridge, which was in very bad condition, was completely renewed.

On Boylston Street Bridge the Boston Elevated Railway Company abandoned its tracks and removed them so that in order to make a safe floor considerable reconstruction was done by the Bridge Service. This work required the installation of several complete lines of new wooden stringers and the removal of several lines of old badly corroded steel stringers. The bridge is now in fairly good condition.

East Wharf, Long Island.

July 17, 1928, a contract was approved with the Rendle Corporation for repairing this wharf. New piles were driven to replace those damaged, some old piles posted, a new deck built, the fences repaired and painted and additional bracing put on. The work was completed September 11, 1928, at a contract cost of \$11,956.70 and was done by this division for the Institutions Department.

Eastern Avenue Wharf.

October 23, 1928, a contract was approved with the Rendle Corporation for repairing the piers and wharf at Eastern avenue for the Penal Institutions Department. All the existing oak piles in the dock were drawn and replaced with new oak piles. Part of the deck of the wharf was rebuilt and the drop adjusted. The inshore end of the dock was dredged to 8 feet below city base.

The work was completed January 23, 1929, at a contract price of \$23,291.80.

Garbage Dump Station, South Street, Dorchester.

November 21, 1928, a contract was approved with Walsh & Co. for repairing the supports of this station. Some of the old piles were posted up, new braces put on and new posts put in. This work was done for the Sanitary Division by this division. It will be completed early in 1929. The condition of this building is such

that more work will be required immediately both on the substructure and the walls and windows of the superstructure.

North End Paving Yard Wharf.

July 26, 1928, a contract was approved with W. H. Ellis & Son Company for the rebuilding of this wharf. The entire deck of the wharf was removed and replaced with new material. New piles, pile caps, fender piles, braces and dump sticks were also provided, although some existing piles and pile caps in good condition were allowed to remain in the structure.

This work was done under the direction of this division for the Highway Division at a contract cost of \$15,988.37, and was completed November 17, 1928.

FERRY SERVICE.

The following ferryboats are in commission:

Name.	When Built.	Length.	Gross Tons.
Noddle Island (rebuilt).....	1921	174 ft. 5 in.	564
General Sumner.....	1900	164 " 3 "	450
John H. Sullivan.....	1912	172 " 3 "	527
Lieutenant Flaherty.....	1921	174 "	727
Ralph J. Palumbo.....	1921	174 "	755
Charles C. Donoghue.....	1926	174 " 4 "	756.77
Daniel A. MacCormack.....	1926	174 " 4 "	756.77

All boats are of the propeller type; the first two are wooden and the others are steel.

Owing to the increasing weight of the trucks which use the ferries, the two wooden boats are not suited to continue in service; and the condition of these hulls is not very good.

In the case of the "Noddle Island" the hull was in such condition in April, 1928, that extensive repairs were ordered by the United States Steamboat Inspection Service. The repairs required were of such a nature and so costly that it was inadvisable to make them and the boat was put out of commission. The boat should be sold as soon as possible to get rid of the maintenance costs.

New steel boats should be provided to take the place of these two wooden boats.

There are two of the old type wooden ferry bridges, supported on pontoons, still in service at the North Ferry. These are unfit for the present vehicular traffic and should be replaced by steel bridges, electrically operated, similar to the others installed in recent years.

"LIEUTENANT FLAHERTY."

A contract for the general overhauling, cleaning and painting of the boat was made with the Richard T. Green Company and approved on September 12, 1928. Included in the requirements of the contract was the installing of one new propeller to take the place of one from which a blade had been knocked off; the city

furnished the spare propeller. While the general repairs were being made, the ends of the roadways were fitted with 8-inch by 8-inch by $\frac{3}{4}$ -inch forged angles for the better protection of roadways from damage caused by the landing of the electrically operated ferry bridges. The terms of this contract were completed on October 22, 1928, and cost \$10,259.

“CHARLES C. DONOGHUE.”

On November 7, 1928, a contract with the Bethlehem Shipbuilding Corporation was approved to clean and paint the boat and make miscellaneous repairs to the hull and machinery, all incidental to the annual inspection as required by the United States Steamboat Inspection Service. On November 26, 1928, the work was completed at a cost of \$4,855.50, of which \$4,127.17 has been paid to date.

“DANIEL A. MACCORMACK.”

On November 26, 1928, a contract with the Richard T. Green Company was approved to clean and paint the boat and make miscellaneous repairs to the hull and machinery, all incidental to the annual inspection of the United States Steamboat Inspection Service. On December 28, 1928, the work was completed at a cost of \$7,539, of which \$6,408.15 has been paid to date.

“RALPH J. PALUMBO.”

A contract with the Atlantic Works to generally overhaul and paint the boat was approved on June 5, 1928. The work done was of a nature to prepare the hull and machinery for continuous running until the boat again comes out for inspection. The work called for under the terms of the contract was completed June 23, 1928, and cost \$9,170.50.

“GENERAL SUMNER.”

On August 14, 1928, a contract with the Bethlehem Shipbuilding Corporation was approved to make some general repairs to the hull of the boat and major repairs to the machinery. The usual items of cleaning and painting the hull were completed. Owing to the excessive deck loads and the inherent weakness of the hull, the main shafting was thrown out of line and one length of shaft, adjacent to one of the thrust bearings,

was broken. The work originally called for under the contract required the lining up of the main shaft from outboard bearing to outboard bearing, but since the misalignment of the shaft at the ends was so great, the degree of the error becoming apparent only after the boat was on the railway, that to properly line up these tail shafts would require the rebuilding of the ends, it was deemed advisable to properly adjust the line and crank shaft only. This change in the contract was made since the sum of money necessary to rebuild the ends of the boat would be greater than the general condition of the boat would justify. Included in this work on the shafting was the furnishing of one new thrust bearing complete, the overhauling and rebabbiting of the other thrust and the rebuilding of one loose coupling. The work on the boat was completed on November 2, 1928, and cost \$8,278.

“JOHN H. SULLIVAN.”

Under a contract with the Richard T. Green Corporation, approved on January 28, 1928, the boat was put on the marine railway incidental to the annual inspection. At this time the boat was cleaned, general repairs made to the hull and machinery and the boat painted throughout. The guards were repaired on either side; included in this work was the renewing of much of the ironwork backing up the wooden guards. In order to obviate the troubles incidental to the landing and lifting of the electrically operated ferry bridges at the ends of the boat, the ends of the roadways were fitted with 8-inch by 8-inch by $\frac{3}{4}$ -inch forged angles; this treatment of the ends of the roadways, originally used on the “Donoghue” and “MacCormack,” has proved quite successful and has reduced maintenance and repairs to ends of roadways to a minimum. This work was completed on March 15, 1928, at a cost of \$10,786.

REMODELING CANOPY, NORTH FERRY, EAST BOSTON.

In order to adapt the approach to the new electrically operated ferry bridges to the double roadway feature of the bridge, it was necessary to rebuild the existing canopy, roadway and sidewalks. To do this work a contract with Walter E. McEachern was approved on March 5, 1928. Included in the work was the fur-

nishing of new gates of structural steel filled with a heavy woven wire mesh, all essentially as furnished at the other electrically operated ferry bridges. The work called for under this contract was completed on April 9, 1928, and cost \$1,845.81.

REPAIRING PIER, NORTH FERRY, EAST BOSTON.

On June 13, 1928, a contract with the Rendle Corporation was approved to rebuild the North Pier. The work consisted of removing the old pier, pulling all old piles and stumps, clearing out submerged piling, walls, etc., depositing of gravel fill and the rebuilding of the entire pier. The exposed piling and the girders have been treated with preservative and the tops of the piles covered with canvas. Some of the piles under the coal wharf were also replaced and part of the center pier repaired. The work called for under this contract was completed on December 22, 1928, and cost \$18,268.35.

HEATING SYSTEM, SOUTH FERRY, BOSTON.

The heating of this head house has been in the past few years rather unsatisfactory; the chief objection being the escape of products of combustion from the gas flame at each radiator, directly into the room to be heated. In October, 1928, the department force prepared to install a new heating system consisting of a gas-fired boiler, automatically controlled, with radiators distributed in various rooms. At the same time a false ceiling was built in the main waiting room in order to reduce the volume of air to be heated and to reduce the exposed area of the room, both to reduce the size of the heating system necessary to raise the temperature of the room to the desired degree. All the materials were purchased by the department and all the work was done by the department force to complete the installation in time for the first of the winter weather.

Yours respectfully,

JOHN E. CARTY,
Division Engineer.

BRIDGE SERVICE.

FINANCIAL STATEMENT, 1928.

Expenditures from Maintenance Appropriation.

Boston bridges	\$451,024 62	
Boston and Cambridge bridges	15,584 52	
		\$466,609 14

Total Expenditures.

From maintenance appropriation	\$466,609 14	
From special appropriations	216,526 24	
		\$683,135 38

EXPENDITURES ON BOSTON BRIDGES.

(1.) Administration:

Salaries:

Division engineer	\$3,750 00
Supervisor	3,358 33
Engineers and draughts-	
men	30,846 02
Clerk	2,164 27
Inspector	5,157 14
Medical inspector	200 00
Foreman	2,365 02
Veterans' pensions	3,938 53
Holiday	7,601 51
Vacations	1,893 92
Injured employees	102 86
Printing, postage and sta-	
tionery	1,377 36
Traveling expense	375 09
Telephone and telegrams,	45 50
Engineers' supplies and	
instruments	65 35
Repairing instruments	16 50
Typewriter inspection	36 40
Office supplies	245 74

\$63,539 54

(2.) Yard and Stockroom:

Yard.

Clerk and watchmen	\$3,972 21	
Traveling expense	257 55	
Tools, new	948 20	
Tools, repaired	557 94	
Telephone	219 35	
Repairs	463 66	
Supplies	249 94	
		<u>\$6,668 85</u>

Stockroom:

Stock purchased during		
year	\$13,570 58	
Stock used	12,009 14	
		<u>\$1,561 54</u>

Automobiles, Trucks and Compressor.

	Truck B-1.	Truck B-2.	Auto B-3.	Auto B-4.	Auto B-5.	Compressor B-6.	Total.
Cost, new.....	\$3,050 00						\$3,050 00
Chauffeur's wages.....			\$1,719 34				1,719 34
Storage.....					\$120 00		120 00
Repairs.....	252 51	\$231 08	132 20	\$283 41	176 99	\$55 07	1,131 26
Supplies.....	7 49	21 40	21 94	7 15	18 23		76 21
Tires and tubes (new and repaired).....	211 29	242 32	15 00	91 57	141 78		701 96
Gasolene and oil.....	221 66	233 68	201 87	282 88	331 81	132 26	1,404 16
Registration.....	4 00	2 00	3 00	3 00	4 50	2 00	18 50
Equipment.....	164 54		18 75	52 14	13 75		249 18
Totals.....	\$3,911 49	\$730 48	\$2,112 10	\$720 15	\$807 06	\$189 33	\$8,470 61

Tidewater Bridges.

BRIDGES.	Drawtenders' Salaries.	Mechanics' Wages.	Material.	Repair Bills.	Supplies.	Total.
Broadway.....	\$16,305 19	\$725 53	\$201 09	\$414 17	\$431 97	\$18,077 95
Charlestown.....	22,369 02	2,580 50	279 25	3,056 45	666 96	28,952 18
Chelsea North.....	18,799 22	2,131 98	397 11	3,925 39	1,405 54	26,659 24
Chelsea South.....	18,644 62	724 50	298 77	724 56	1,055 57	21,448 02
Chelsea Street.....	16,393 29	6,714 46	4,497 88	1,655 72	449 08	29,710 43
Congress Street.....	16,860 15	1,365 64	775 29	894 90	1,492 59	21,388 57
Dorchester Avenue.....	16,273 93	3,588 96	2,797 95	1,785 10	432 28	24,878 22
Dover Street.....	16,250 59	3,996 99	1,642 24	1,718 06	327 68	23,935 56
L Street*.....	16,230 38	1,129 06	487 78	1,020 99	403 25	19,271 46
Malden.....	16,852 62	1,335 65	588 88	423 40	686 41	19,886 96
Meridian Street.....	16,930 88	1,935 68	1,477 31	1,468 02	448 25	22,260 14
Northern Avenue.....	18,623 15	6,465 83	7,657 19	2,358 36	5,950 62	41,055 15
Summer Street.....	16,801 90	504 99	73 22	577 82	478 10	18,436 03
Warren.....	16,834 58	3,664 89	3,255 18	583 02	480 78	24,818 45
Totals.....	\$244,169 52	\$26,864 66	\$24,429 14	\$20,605 96	\$14,709 08	\$340,778 36

* Now Summer Street over Reserved Channel.

Repairs on Inland Bridges.

BRIDGES.	Labor and Material.
Albany Street.....	\$1,499 28
Austin Street — Prison Point.....	662 51
Arlington Street.....	767 58
Babson Street.....	203 07
Beacon Street, over Boston & Albany Railroad.....	131 91
Bennington Street.....	32 13
Berkeley Street.....	947 72
Blakemore Street.....	22 91
Blue Hill Avenue.....	86 23
Boston Street.....	90 16
Boylston Street, over Boston & Albany Railroad.....	6,291 43
Braddock Park — Follen Street (Foot).....	43 91
Broadway, over Boston & Albany Railroad.....	382 59
Brooks Street Stairs.....	1 13
Carried forward.....	\$11,162 56

Repairs on Inland Bridges.—Continued.

BRIDGES.	Labor and Material.
<i>Brought forward.</i>	\$11,162 56
Brookline Avenue.	3 25
Byron Street.	10 71
Cambridge Street, Allston.	61 88
Cambridge Street, over Boston & Maine Railroad.	92 74
Central Avenue.	334 93
Columbia Road, Old Colony Division.	277 21
Columbus Avenue.	225 00
Charlestown Bridge, over Water Street.	69 00
Dana Avenue.	368 67
Dartmouth Street (Rent).	300 00
Dorchester Avenue, over railroad.	278 60
Everett Street.	16 50
Fairmount Avenue.	665 58
Freeport Street.	4,833 38
Gove Street (Foot).	182 64
Granite Avenue.	6 50
Gainsborough Street.	52 37
Harvard Street.	33 85
Hyde Park Avenue.	49 94
Irvington Street (Yarmouth Street) (Foot).	12 00
Ipswich Street.	25 00
Jones Avenue (Foot).	244 46
Massachusetts Avenue, over New York, New Haven & Hartford Railroad.	29 26
Massachusetts Avenue, over Boston & Albany Railroad.	331 72
Metropolitan Avenue.	821 72
Milton Street.	81 07
Milton Lower Mills.	82 94
Morton Street.	674 92
Neptune Road.	400 00
New Alien Street.	131 76
Oakland Street.	519 37
Public Landing (Northern Avenue).	208 36
River Street.	815 85
Sprague Street.	263 68
Shawmut Avenue.	150 44
<i>Carried forward.</i>	\$23,817 86

Repairs on Inland Bridges.—Concluded.

BRIDGES.	Labor and Material.
<i>Brought forward</i>	\$23,817 86
Tremont Street.....	6 50
Toll Gate Way (Foot).....	162 66
West Fourth Street.....	182 57
West Rutland Square.....	69 82
Cleaning bridges.....	3,965 00
Snow removal.....	1,801 31
	<u>\$30,005 72</u>

SUMMARY.

Administration	\$63,539 54
Yard and stockroom	8,230 39
Automobiles and trucks	8,470 61
Tidewater bridges	340,778 36
Inland bridges	30,005 72
Total	<u>\$451,024 62</u>

SPECIAL APPROPRIATIONS.

BRIDGES, REPAIRS, ETC.

CHELSEA BRIDGE SOUTH.

Progressive Iron Works, Inc.	\$2,975 00	
Advertising	8 25	
	<u></u>	\$2,983 25

CHELSEA STREET BRIDGE.

Material	\$2,821 76	
Advertising	26 38	
	<u></u>	2,848 14

DORCHESTER AVENUE BRIDGE.

C. & R. Construction Company	\$19,627 26	
Maurice M. Devine	3,812 50	
Advertising	8 50	
Engineering	517 83	
	<u></u>	23,966 09

DOVER STREET BRIDGE.

W. H. Ellis & Son Company	\$7,091 97	
Progressive Iron Works, Inc.	3,682 63	
The Boston Bridge Works, Inc.	1,641 04	
	<u></u>	
<i>Carried forward</i>	\$12,415 64	\$29,797 48

<i>Brought forward</i>	\$12,415 64	\$29,797 48
Boston Elevated Railway	969 72	
Material	324 77	
Advertising	37 90	
Engineering	42 19	
		13,790 22

FREEPORT STREET BRIDGE.

Material, lumber		3,246 85
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MALDEN BRIDGE.

Walsh & Co.	\$47,665 59	
Boston Elevated Railway	272 51	
Advertising	8 00	
Engineering	230 16	
		48,176 26

MERIDIAN STREET BRIDGE.

W. H. Ellis & Son Company	\$1,458 94	
The Rendle Corporation	1,056 25	
Advertising	34 18	
		2,549 37

NORTHERN AVENUE BRIDGE.

The Boston Bridge Works, Inc.	\$4,301 62	
New England Construction and Maintenance Company	1,312 82	
Maurice M. Devine	1,851 60	
The Atlantic Works, new engine	3,520 00	
Advertising	32 50	
		11,018 54

PRISON POINT BRIDGE.

John F. Shea & Co.	\$1,837 67	
Advertising	8 25	
		1,845 92

WARREN BRIDGE.

V. (James) Grande	\$1,766 53	
Advertising	7 75	
		1,774 28

CHARLESTOWN BRIDGE.

Advertising		7 50
Total		<u>\$112,206 42</u>

COLUMBUS AVENUE BRIDGE.

Joseph A. Singarella	\$59,775 55	
Inspection of material	119 72	
Rent	30 00	
Fence	81 72	
Photographs	33 00	
Supplies	138 37	
Advertising	55 55	
Engineering	7,283 20	
		<u>\$67,517 11</u>

CONGRESS STREET BRIDGE, PLANS, ETC.

Strauss Engineering Corporation	\$500 00
Photographs	112 50
Bird's-eye view drawing	80 00
Supplies	4 35
Engineering	339 45
	<u>\$1,036 30</u>

TREMONT STREET BRIDGE.

James F. Kennedy Construction Company	\$19,320 93
Photographs	33 00
	<u>\$19,353 93</u>

MORTON STREET IMPROVEMENTS.

Legal expense	<u>\$25 00</u>
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OAKLAND AND ASHLAND STREETS IMPROVEMENTS.

A. G. Tomasello & Son, Inc.	\$11,878 75
Legal expense	25 00
Engineers' supplies	173 79
Advertising	26 75
Engineering	2,381 53
	<u>\$14,485 32</u>

RIVER STREET RECONSTRUCTION.

Legal expense	\$25 00
Office supplies	165 66
Traveling expense	45 60
Advertising	24 00
Engineering	1,624 37
	<u>\$1,884 63</u>

Expenditures from Special Appropriations, 1928.

	Balances from 1927.	Total Credits, Including Balances Carried Over and Transfers.	Expended During Year 1928.	Balances Unexpended December 31, 1928.
Beacon Street Bridge, rebuilding ¹	\$4,115 37			
Bridges, repairs, etc. ²	26,076 89	\$126,076 89	\$112,206 42	\$13,852 94
Broadway Bridge, South Boston ³	5,724 09			
Cambridge Street Bridge, re- building.....	16,894 92	16,894 92		16,894 92
Columbus Avenue Bridge ⁴		85,000 00	67,517 11	10,864 34
* Congress Street Bridge ⁵		880,000 00		879,975 25
Congress Street Bridge, plans, etc.....	13,882 04	13,882 04	1,036 30	12,845 74
Dartmouth Street Bridge ⁶	2,746 14			
Massachusetts Avenue Bridge, ⁷	4,096 01			
Tremont Street Bridge ⁸	50,072 67	19,353 93	19,353 93	
West Newton Street Bridge, ⁹	5,424 65			
Morton Street Improvement ¹⁰			25 00	
Oakland and Ashland Streets, Improvements ¹¹			14,485 32	
River Street Reconstruction ¹² ..			1,884 63	
Totals.....	\$129,032 78	\$1,141,027 78	\$216,508 71	\$934,433 19

¹ \$4,115.37 transferred to park, Park Square District.² \$17.53 expended by Boston and Cambridge Bridges Commission.³ \$4,317.77 transferred to East Boston Ferry Improvements, etc.⁴ \$1,406.32 transferred to park, Park Square District.⁵ See also Water Service.⁶ See also Water Service.⁷ \$2,746.14 transferred to park, Park Square District.⁸ \$4,096.01 transferred to park, Park Square District.⁹ \$30,698.74 transferred to park, Park Square District.¹⁰ \$5,424.65 transferred to park, Park Square District.¹¹, ¹² See also Paving Service.

* \$800,000 loan authorized but not issued.

Bridge Openings, 1928.

BRIDGES.	STEAMERS.			SAILING VESSELS.			TUGS.			BARGES.			ALL OTHERS.			TOTAL NUMBER OF VESSELS.			Total Number of Carriages.	Total Number of Openings.
	Day.		Total.	Day.		Total.	Day.		Total.	Day.		Total.	Day.		Total.	Day.		Total.		
	Night.			Night.			Night.			Night.			Night.			Night.				
Broadway	23	12	35	65	1	66	1,438	37	1,475	329	13	342	516	24	540	2,371	87	2,458	486	972
Charlestown	12	6	18	37	2	39	2,665	605	3,270	417	135	552	2,086	687	2,773	5,217	1,435	6,652	1,089	1,360
Chelsea North	1,632	180	1,812	47	1	48	10,716	820	11,536	1,440	140	1,580	1,255	143	1,398	15,090	1,284	16,374	1,981	6,632
Chelsea South	75	12	87	59	2	61	4,593	255	4,848	122	5	127	2,605	204	2,809	7,454	478	7,932	1,850	2,546
Chelsea Street	95	90	185	.....	.....	.....	1,399	579	1,978	124	109	233	987	101	1,088	2,605	879	3,484	812	1,797
Congress Street	142	38	180	77	1	78	2,488	158	2,646	456	49	505	678	19	697	3,841	265	4,106	726	2,243
Dorchester Avenue	97	37	134	66	1	67	1,436	42	1,478	333	11	344	480	5	485	2,412	96	2,508	492	1,359
Dover Street . . . . .	.....	.....	.....	64	.....	64	1,418	38	1,456	315	16	331	548	40	588	2,345	94	2,439	480	1,189
* L Street	57	63	120	155	87	242	1,789	839	2,628	225	89	314	1,386	710	2,096	3,612	1,788	5,400	1,506	3,485
Malden	124	63	187	23	.....	23	841	57	898	239	15	254	212	50	262	1,439	185	1,624	325	1,008
Meridian Street	727	415	1,142	14	3	17	5,585	1,495	7,080	733	444	1,177	3,267	502	3,769	10,326	2,859	13,185	1,916	7,147
Northern Avenue	526	341	867	77	5	82	4,187	207	4,394	484	61	545	1,866	33	1,899	7,140	647	7,787	1,394	3,721
Summer Street	139	17	156	69	3	72	2,478	175	2,653	454	61	515	683	39	722	3,823	295	4,118	704	2,296
Warren	9	4	13	38	.....	38	2,560	569	3,129	581	101	682	2,004	731	2,735	5,192	1,405	6,597	1,562	2,935
Totals	3,658	1,278	4,936	791	106	897	43,593	5,876	49,469	6,252	1,249	7,501	18,573	3,288	21,861	72,867	11,797	84,664	15,923	38,690

* Now Summer Street over Reserved Channel.

GRANITE AVENUE BRIDGE.*

Drawtenders' salaries	.	.	.	.	.	.	\$2,703 69
Material	.	.	.	.	.	.	12 49
Repairs	.	.	.	.	.	.	1,083 88
Supplies	.	.	.	.	.	.	50 64
							<u>\$3,850 70</u>

* Maintained jointly by County of Suffolk and town of Milton.

Draw Openings from January 1 to December 31, 1928.

STEAMERS.			SAILING VESSELS.			TUGS.			BARGES.			ALL OTHERS.			TOTAL NUMBER OF VESSELS.			Total Number of Carcoes.	Total Number of Openings.
Day.	Night.	Total.	Day.	Night.	Total.	Day.	Night.	Total.	Day.	Night.	Total.	Day.	Night.	Total.	Day.	Night.	Total.		
2		2	1	.....	1	193	7	200	92	5	97	73	26	99	361	38	399	48	264

FERRY SERVICE.

FINANCIAL STATEMENT FOR THE YEAR ENDING
DECEMBER 31, 1928.

1. Receipts.

Total cash receipts during the year	\$72,882 15
Cash in hands of tollmen at beginning of year	200 00
	<u>\$73,082 15</u>

Cash paid over to City Collector	\$72,882 15
Cash in hands of tollmen December 31, 1928	200 00
	<u>\$73,082 15</u>

2. Appropriations and Expenditures.

Received from annual appropriations for Ferry Service	\$560,008 76
Transferred to Public Welfare Department	1,673 20
	<u>\$558,335 56</u>

Unexpended balances from special appropriations, January 1, 1928.	\$238,959 16
Transferred from Broadway Bridge, South Boston	4,317 77
	<u>243,276 93</u>

	\$801,612 49
Total expenditures	<u>676,394 90</u>

Unexpended balances of special appropriations, December 31, 1928	<u>*\$125,217 59</u>
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3. Result of Operations for the Year.

Receipts for the year (net income)	\$72,882 15
Ordinary expenses (maintenance appropriation)	\$558,335 56
Interest paid on ferry debt	53,552 50
	<u>\$611,888 06</u>

<i>Carried forward</i>	\$611,888 06	\$72,882 15
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* Of this amount \$50,000 in loans has been authorized, but not issued.^c

<i>Brought forward</i>	\$611,888 06	\$72,882 15
Depreciation on ferryboats	197,047 74	
Decrease in value of machinery and tools	467 04	
Decrease in value of fuel on hand	992 25	
	\$810,395 09	
Increase in value of supplies on hand	934 79	
Net outgo for the year		809,460 30
Net loss for the year		<u><u>*\$736,578 15</u></u>

* Does not include expenditures for special appropriations.

Balance Sheet.

End of Fiscal Year, December 31, 1928.

ASSETS.		LIABILITIES.	
AVAILABLE ASSETS:		CURRENT LIABILITIES:	
Cash in hands of tollmen at close of year.....	\$200 00	None.	
Inventory of supplies, viz.:			
Fuel.....	4,167 45		
Supplies for maintenance.....	8,533 66		
Rents receivable.....	753 36		
Total available assets.....	\$13,654 47		
CONTINGENT ASSETS:		CONTINGENT LIABILITIES:	
City Treasurer.....	* 125,217 59	Appropriations account.....	* \$125,217 59
FIXED ASSETS:		FIXED LIABILITIES:	
Real estate, land and buildings ¹	* 610,100 00	Capital of the city invested in the ferries, viz.:	
Ferryboats ²	993,126 30	Total expenditures of all kinds for seventy-	
Machinery, tools, etc.....	4,203 34	one years, including interest on ferry	
Total tangible assets.....	\$1,746,301 70	debt.....	\$22,361,081 22
Deficiency or loss by operation and maintenance		Less total receipts.....	8,353,286 19
of the ferries for seventy-one years to date....	12,386,710 92		
	\$14,133,012 62		
			14,007,795 03
			\$14,133,012 62

* Includes \$50,000 authorized, but not issued.

¹ Original purchase.....	\$276,375 00	² Assessors' figures.	
New buildings, drops, slips, cost to 1913..	607,523 64	³ Total cost to date, per ferry books.....	\$2,178,182 01
Land, Lincoln's Wharf, cost to 1887.....	5,562 52	Less boats sold, depreciated or destroyed,	1,185,055 71
Land, Battery Wharf, cost, 1893.....	10,000 00		\$993,126 30
	\$899,461 16		
New drops, both ferries, cost from 1923 to			
December 31, 1928.....	886,648 44		
	\$1,786,109 60		

Comparative Balance Sheets at the Close of Each Year.

	January 31, 1925.	December 31, 1925.	December 31, 1926.	December 31, 1927.	December 31, 1928.
<i>Assets.</i>					
Cash, tollmen's capital.....	\$200 00	\$200 00	\$200 00	\$200 00	\$200 00
Rents receivable.....	489 21	502 34	583 34	607 84	753 36
Fuels and supplies in stock.....	20,088 22	18,366 96	11,589 19	12,758 57	12,701 11
City Treasurer (balance of appropriation).....	217,676 36	1,020,064 26	368,044 01	238,959 16	125,217 59
Ferryboats (less depreciation).....	857,439 71	800,124 44	1,270,288 27	1,190,174 04	993,126 30
Machinery and tools.....	4,163 58	3,747 23	4,634 31	4,670 38	4,203 34
Real estate, land and buildings (assessors' valuation).....	610,100 00	610,100 00	610,100 00	610,100 00	610,100 00
Total tangible assets.....	\$1,710,157 08	\$2,453,195 23	\$2,265,439 12	\$2,057,469 99	\$1,746,301 70
Cost of avenues, etc., East Boston (previous to 1871) ¹	315,815 68	315,815 68	315,815 68	315,815 68	315,815 68
Deficiency of assets (loss).....	8,966,610 71	9,726,416 60	10,465,340 20	11,216,403 27	12,070,895 24
Totals.....	<u>\$10,992,583 47</u>	<u>\$12,495,427 51</u>	<u>\$13,046,595 00</u>	<u>\$13,589,688 94</u>	<u>\$14,133,012 62</u>
<i>Liabilities.</i>					
Capital invested by City of Boston to date.....	\$10,774,907 11	\$11,475,363 25	\$12,678,550 99	\$13,350,729 78	\$14,007,795 03
Appropriations account (credit balances).....	217,676 36	1,020,064 26	368,044 01	238,959 16	125,217 59
Total liabilities.....	<u>\$10,992,583 47</u>	<u>\$12,495,427 51</u>	<u>\$13,046,595 00</u>	<u>\$13,589,688 94</u>	<u>\$14,133,012 62</u>
<i>Details of Capital Invested by the City of Boston.</i>					
Total expenditures to date per ferry books.....	\$18,501,559 12	\$19,273,121 91	\$20,540,211 31	\$21,296,977 47	\$22,028,379 87
Interest of debt for the year (per City Auditor's reports).....	41,710 00	38,752 50	50,352 50	55,007 50	53,552 50
Interest, previous years, etc. (net debts, per City Auditor's reports),	279,148 85	279,148 85	279,148 85	279,148 85	279,148 85
Total expenditures.....	<u>\$18,822,417 97</u>	<u>\$19,591,023 26</u>	<u>\$20,869,712 66</u>	<u>\$21,631,133 82</u>	<u>\$22,361,081 22</u>
Deduct total receipts paid to City Collector.....	8,047,510 86	8,115,660 01	8,191,161 67	8,280,404 04	8,353,286 19
Excess expenditures, capital.....	<u>\$10,774,907 11</u>	<u>\$11,475,363 25</u>	<u>\$12,678,550 99</u>	<u>\$13,350,729 78</u>	<u>\$14,007,795 03</u>

¹ Included in deficiency of assets in Table 4.

Comparison of Receipts, Appropriations and Expenditures.

	1924-25.	1925. (11 months.)	1926.	1927.	1928.
RECEIPTS.					
From foot passengers (tollmen).....	\$27,347 91	\$22,254 80	\$23,087 75	\$21,907 61	\$20,794 51
From foot passes (office sales).....	280 20	264 70	361 30	309 90	335 80
From extra passengers on teams (gatemmen).....	1,525 94	727 12	800 61	720 35	655 27
From team tickets (office sales).....	1,947 00	2,026 00	2,307 00	2,753 50	3,024 10
From strip team tickets (tollmen).....	13,204 50	11,400 50	12,531 00	12,187 00	12,070 50
From cash fares for teams (gatemmen).....	35,796 62	30,542 28	35,328 46	35,429 77	35,088 96
From free ferries July 4.....	1 00	1 00	1 00	1 00	1 00
Total from rates.....	\$80,103 17	\$67,216 40	\$74,417 12	\$73,309 13	\$71,970 14
From rents.....	417 16	368 02	523 04	489 50	361 32
From old material sold.....	64 68	15 00	12 00	68 00	10 00
From other sources.....	576 70	549 73	549 50	* 15,375 74	540 69
Total ordinary receipts.....	\$81,161 71	\$68,149 15	\$75,501 66	\$89,242 37	\$72,882 15
EXPENDITURES (ORDINARY).					
Office:					
Division engineer's salary (part)†.....	\$1,250 00	\$833 33	\$1,250 00	\$1,250 00	\$1,250 00
General foreman and cashier ‡.....	5,013 70	4,704 06	5,259 69	5,416 09	5,632 50
Clerk.....	1,386 59	1,281 13	1,459 83	1,500 00	1,562 65
Retired veterans' pensions.....	7,633 27	6,442 76	6,247 13	4,161 53	4,020 63
Retired employees' pensions.....	2,921 00	2,404 00	2,215 00	1,942 00	1,800 00
Medical inspector (part).....	83 33	91 67	91 67	100 00	100 00
Stationery.....	43 04	304 18	142 00	129 86	237 93

Printing.....	986 60	1,283 89	1,594 75	1,281 43	1,154 46
Telephones.....	249 52	237 89	270 02	279 30	257 69
Advertising.....	38 50	7 50	53 20	101 73	58 00
Car fares.....	88 17	101 45	109 73	127 26	131 25
Postage.....	4 00	20 00	4 00	4 00	6 00
Premiums, surety companies.....	85 00	85 00	94 00	91 00	169 00
Total office expenses.....	\$19,852 72	\$17,796 86	\$18,791 02	\$16,384 20	\$16,980 11
Ferryboats and landings:					
Employees (wages) §.....	\$315,339 26	\$302,376 44	\$338,291 69	\$367,040 21	\$369,216 03
Fuel.....	75,278 43	62,388 96	66,738 24	67,657 76	64,916 93
Teaming, weighing coal, etc.....	3,296 97	3,152 02	4,331 75	2,848 00	1,878 00
Supplies.....	22,490 54	15,506 25	17,664 04	17,297 55	15,721 16
Gas.....	752 33	968 61	1,149 09	1,272 55	3,795 03
Oil.....	2,543 80	1,125 48	1,857 99	1,877 44	1,770 15
Electric light.....	4,973 19	4,579 53	5,848 39	6,583 97	6,048 38
Towing teams by electric motors.....	604 57	843 42	954 13	121 21	
Repairs of boats.....	51,230 02	51,571 46	48,702 43	58,516 16	63,943 43
Repairs of buildings, piers and drops.....	24,814 05	9,528 99	9,103 14	9,455 95	10,153 05
Furnishings.....	256 00	326 50	319 25	427 45	405 30
Other expenditures ||.....	2,095 58	2,076 17	2,595 49	2,336 36	3,507 99
Totals.....	\$523,527 46	\$472,240 69	\$516,316 65	\$552,328 81	\$558,335 56

* Includes \$13,447 85 received from sale of ferryboat "Governor Russell" and \$1,387 85 from sale of ferryboat "Hugh O'Brien."

† Remained paid by Bridge Service.

‡ Includes in employees (wages) after February 1, 1916 in office books.

§ Includes payment under Workmen's Compensation Act.

|| Includes repairs of coal carts, medical attendance, electric power, etc.

Comparison of Receipts, Appropriations and Expenditures.—Concluded.

	1924-25.	1925. (11 months.)	1926.	1927.	1928.
EXPENDITURES FROM SPECIAL APPROPRIATIONS.					
East Boston Ferry, improvements, etc.....	\$202,726 78	\$192,096 24	\$154,879 78	\$9,930 44	\$5,000 00
Ferryboats, repairs, etc.....					
Ferryboat "Noddle Island".....	8,290 30				
Ferry improvements, etc.....	63,984 60	62,273 08	24,404 15	1,761 90	73,424 00
East Boston Ferry, two additional boats, and other permanent improvements.....		3,242 78	532,736 32	142,392 51	39,635 34
Total expenditures, regular and special.....	\$798,529 14	\$729,852 79	\$1,228,336 90	\$706,413 66	\$676,394 90
Balances in treasury unexpended.....	217,676 36	1,020,064 26	368,044 01	238,959 16	125,217 59
APPROPRIATIONS.					
Regular annual appropriations.....	\$521,688 80	\$488,910 17	\$533,021 57	\$547,038 06	\$558,335 56
Transfers from other sources.....	1 1,838 66			15,290 75	
East Boston Ferry, improvements, etc.....	2 295,000 00	5 155,000 00			14,317 77
Ferryboat "Noddle Island".....	3 6,721 13				
Ferry improvements, etc.....	4 77,884 05	6 80,000 00	8 60,000 00	25,000 00	
East Boston Ferry, two additional boats.....		7 825,000 00			
	\$903,132 64	\$1,393,910 17	\$593,021 57	\$577,328 81	\$562,653 33

¹ Transferred from other appropriations.² Appropriation from loan inside debt limit, \$275,000 transferred from other appropriations, \$20,000.³ Transferred from other appropriation, \$6,721.13.⁴ Appropriation from taxes, \$60,000 transferred from other appropriations, \$17,884.05.⁵ Loan of \$80,000 inside of debt limit transferred from other appropriations, \$75,000.⁶ Appropriation from taxes, \$80,000.⁷ Loan of \$750,000 outside of debt limit; appropriation of \$75,000 from taxes.⁸ Appropriation from taxes, \$60,000.

Total Expenditures Upon Ferries Since 1858-59.

Expenditures for avenues, paving interest, etc., previous to the purchase of the ferries by the city	\$444,101 30
Purchase of the ferries, April, 1870	276,375 00
Expenditures for ferryboats since April, 1870, ...	2,178,182 01
Expenditures for new buildings, piers, drops, etc.	1,491,468 89
Expenditures for tools and fixtures (prior to 1910)	14,752 46
Expenditures for land from Lincoln's Wharf in 1887	5,562 52
Expenditures for land from Battery Wharf in 1893	10,000 00
Total expenditures on capital account	\$4,420,442 18
Expenditures for repairs of all kinds	2,506,776 16
Expenditures for fuel	2,728,208 80
Expenditures for salaries and wages	9,868,030 84
Expenditures for all other purposes	2,837,623 24
	\$22,361,081 22

Total Receipts from Ferries Since 1858-59.

Receipts from rents, etc., previous to pur- chase of ferries	\$29,588 56
Receipts from ferry tolls since purchase of ferries	8,020,347 34
Receipts from rents since purchase of ferries, ...	72,033 08
Receipts from sale of ferryboats	167,403 14
Receipts from all other sources, per ferry books	33,379 22
Receipts from all other sources, additional, per City Auditor	30,734 85
Total receipts from all sources	\$8,353,486 19
Less amount with tollmen as capital	200 00
Total receipts, auditor's reports	\$8,353,286 19

**REGULAR ANNUAL (ORDINARY) AND SPECIAL APPROPRIATIONS
(EXTRAORDINARY) OF THE FERRY SERVICE FOR THE YEAR
ENDING DECEMBER 31, 1928.**

Appropriations (regular) for the year ending December 31, 1928	\$560,008 76
Transferred to Public Welfare Department	1,673 20
Amount of expenditures (regular) for the year	\$558,335 56

SPECIAL APPROPRIATIONS.

EAST BOSTON FERRY, IMPROVEMENTS, ETC.

Unexpended balance January 1, 1928	\$682 23
Transfer from Broadway Bridge, South Boston	4,317 77

\$5,000 00

Expenditures for year made up as follows:

Amount paid to:

Execution of court, on account of eighth and final estimate of Rudolph Jergensen; foundations for ferry bridges, South Ferry, on contract dated November 27, 1922	\$5,000 00
---	------------

East Boston Ferry, two additional boats and other permanent improvements:

Unexpended balance January 1, 1928	* \$146,628 39
Expenditures for year 1928	39,635 34

Unexpended balance December 31, 1928 * \$106,993 05

Expenditures for year made up as follows:

Pay rolls, labor and engineering	\$1,528 52
Travel expense	97 24
Advertising	7 75
Traffic markers	77 00
Paving	264 40
Electrical supplies and labor	1,352 52
J. Edward Ogden Company, Inc., miscellaneous work	1,982 41
Amount paid to W. E. McEachern, remodeling canopy, North Ferry, East Boston	1,845 81
Amount paid to W. H. Ellis & Son Company under contract for ferry bridge, North Ferry, East Boston:	
Amount of work done under contract	\$27,719 56
Less amount paid in 1927	22,286 12
	<u>5,433 44</u>

Amount paid to J. Edward Ogden Company, Inc., under contract for electrically operated ferry bridges with gallows frame and accompanying machinery:

Amount of work done under contract	\$140,500 00
Less amount paid in 1927	113,453 75
	<u>27,046 25</u>
	<u>\$39,635 34</u>

Ferry Improvements, etc.:

Unexpended balance January 1, 1928	\$91,648 54
Expenditures for year 1928	73,424 00

Unexpended balance December 31, 1928 \$18,224 54

Expenditures for year made up as follows:

Advertising	\$7 75
Water feed for boiler	37 63
Carting boiler	18 00
Special drum hauling machine	2,275 00
Double drum hauling machine with electric equipment	2,076 00
Roadway gates on "John H. Sullivan" manufactured and installed	550 00
	<u>\$4,964 38</u>
Carried forward	\$4,964 38

* \$50,000 authorized but not issued.

<i>Brought forward</i>	\$4,964 38
W. H. Ellis & Son Company, labor and material furnished,	450 00
Amount paid to W. H. Ellis & Son Company, under contract for repairing piers at North and South Ferries	18,657 33
Amount paid to Rendle Company under contract for repairing piers at North Ferry	18,268 35
Amount paid to Bethlehem Shipbuilding Corporation, Limited, under contract for furnishing and installing new boilers in "John H. Sullivan"	28,895 00
Boilers, etc.	1,390 94
Pump and fittings	798 00
	\$73,424 00

RECEIPTS AT EACH FERRY.

North Ferry.

FROM TOLLMEN.	From Foot Passengers.	From Tickets.	Totals.
Boston side.....	\$3,492 94	\$1,661 50	\$5,154 44
East Boston side.....	3,115 81	2,022 00	5,137 81
Totals.....	\$6,608 75	\$3,683 50	\$10,292 25

From tollmen	\$10,292 25
From gatemen:	
15,334 foot passengers at 1 cent .	\$153 34
Cash fares for teams	6,481 20
	6,634 54
Total at North Ferry	\$16,926 79

South Ferry.

FROM TOLLMEN.	From Foot Passengers.	From Tickets.	Totals.
Boston side.....	\$7,445 47	\$4,468 50	\$11,913 97
East Boston side.....	6,740 29	3,918 50	10,658 79
Totals.....	\$14,185 76	\$8,387 00	\$22,572 76

From tollmen		\$22,572 76
From gatemen:		
50,193 foot passengers at 1 cent .	\$501 93	
Cash fares for teams	28,607 76	
		<u>29,109 69</u>
Total at South Ferry		<u>\$51,682 45</u>
North and South Ferries		\$68,609 24
Tickets paid for at ferry office		3,359 90
Received in lieu of free ferries July 4, 1928		1 00
		<u>\$71,970 14</u>
Total from rates		\$71,970 14
Rents for the year		361 32
Headhouse privileges		400 00
Care of public telephone booths		44 00
Commission on public telephone		96 69
Old material sold		5 00
Damages		5 00
		<u>\$72,882 15</u>
Total receipts for year		<u>\$72,882 15</u>

TRAVEL ON THE FERRIES FROM JANUARY 1, 1928,
TO DECEMBER 31, 1928, INCLUSIVE.

	North Ferry.	South Ferry.
Foot passengers at 1 cent each	676,209	1,468,769
Foot passengers by ticket	12,396	18,875
		<u>18,875</u>
Total foot passengers	<u>688,605</u>	<u>1,487,644</u>
One-horse teams, light motor trucks, pleasure carriages and runabouts, ...	69,820	212,841
Two-horse pleasure carriages, hacks and touring cars	72,580	334,755
Two-horse teams and motor trucks.	65,445	166,337
Three-horse teams and heavy motor trucks	1,517	1,955
Four-horse teams	48	707
Free teams, hacks and motor vehicles	9,274	21,431
	<u>218,684</u>	<u>738,026</u>

Motor Vehicle Traffic (Reports of Captains).

January 1, 1928, to December 31, 1928.

	North Ferry.	South Ferry.	Total.
Runabouts.....	¹ 24,136	⁴ 499,070	123,206
Touring cars.....	² 82,404	⁵ 333,931	416,335
Trucks.....	³ 57,541	⁶ 176,729	234,270
Totals.....	164,081	609,730	773,811

¹ Includes 578 free.² Includes 5,087 free.³ Includes 3,223 free.⁴ Includes 2,115 free.⁵ Includes 9,923 free.⁶ Includes 7,570 free.

Total paying foot passengers 2,176,249

Total foot passengers carried 2,176,249

Total paying teams 926,005

Total free teams 30,705

956,710

TOTAL TRAVEL OF BOTH FERRIES FROM FEBRUARY 1, 1923,
TO DECEMBER 31, 1928.

	1923-24.	1924-25.	1925. (11 mons.)	1926.	1927.	1928.
One-horse teams *.....	445,839	406,336	331,086	348,147	314,714	282,661
Two-horse teams†.....	314,672	291,710	222,543	263,763	248,351	231,782
Three-horse teams.....	1,548	1,249	736	1,868	3,422	3,472
Four-horse teams.....	4,816	2,105	1,514	2,380	1,303	755
Two-horse, carriages, hacks.‡	366,846	338,031	290,361	365,540	397,600	407,335
Two-cent tolls, handcars, etc.	4,409	3,098	2,282			
Drag-wheels, etc.....	5	35				
Paid teams at both ferries,	1,138,135	1,042,564	848,522	981,698	965,390	926,005
Free teams at both ferries,	26,197	27,988	24,417	26,195	28,328	30,705
Total teams at both ferries.	1,164,332	1,070,552	872,939	1,007,893	993,718	956,710
Foot passengers paid.....	3,224,419	2,844,317	2,298,192	2,418,209	2,293,232	2,176,249
Foot passengers free.....	1,650	1,584	270			
Total foot passengers..	3,246,089	2,845,901	2,298,462	2,418,209	2,293,232	2,176,249

NOTE.—Team travel includes automobiles.

* Includes one-seat automobiles. † Includes motor trucks. ‡ Includes two-seat automobiles.

APPENDIX C.

REPORT OF THE DIVISION ENGINEER OF THE HIGHWAY DIVISION.

BOSTON, January 2, 1929.

MR. JAMES H. SULLIVAN,
Commissioner of Public Works.

DEAR SIR,— I submit herewith a statement of the activities and expenditures of the Lighting and the Paving Services for the year ending December 31, 1928.

The maintenance expenditures for the Highway Division for the year were as follows:

Lighting Service	\$977,195 76
Paving Service	1,698,978 94
Total	<u>\$2,676,174 70</u>

MAINTENANCE.

The division forces were engaged during the year in resurfacing macadam roadways, patching and repairing defects in roadways and sidewalks. Altogether about sixty streets were resurfaced, nearly all of which were in the Roxbury, Dorchester, West Roxbury, South Boston and Brighton districts.

The Brighton paving yard plant, after having been nearly destroyed by fire, has been rebuilt on a much larger and more efficient scale and has delivered a much larger output of hot and cold mixed asphalt and tar for the various parts of the city and the repair work on asphalt and bitulithic pavements out of guarantee. This work has been done by the division forces.

The snow plowing of streets in the suburbs was done under the direction of the district foremen. A greater number of heavy duty hired trucks equipped with snow plows were engaged in keeping all streets open to travel. After each snow fall, in addition to the work of snow plowing, the district forces removed the snow from important shopping centers in the suburban districts.

CONSTRUCTION.

During the year contracts were awarded to do work on about one hundred and twelve streets. There were about 52,000 square yards of recut granite block laid; 211,000 square yards of sheet asphalt; 112,000 square yards of bitulithic, all laid on a concrete or macadam base; and 164,000 square yards of artificial stone sidewalks. Fifty-one streets laid out under the "Highways making of," appropriation, were constructed.

The following are important thoroughfares that were reconstructed: Border street, Central square to Condor street; Boylston street, Ipswich street to Brookline avenue; Cambridge street, Charles river to Harvard avenue; Cambridge street, Sever street to Somerville line; Condor street, Border street to Meridian street; D street, West First street to Dorchester avenue; Hanover street, Washington street to Commercial street; Harrison avenue, Dover street to East Newton street; Heath street, Columbus avenue to South Huntington avenue; Longwood avenue, Brookline avenue to Riverway; Providence street, Arlington street to Church street.

STREET SIGNS.

During the year the Paving Service has continued the erecting of new street signs principally on the most important thoroughfares of Dorchester, South Boston, Roxbury, East Boston, Hyde Park, and West Roxbury. All new streets constructed during the year were also supplied with the new signs.

The blocking in of signs between the thoroughfare streets has begun and will be continued during the coming year.

STREET LIGHTING.

The Lighting Service has installed twenty-two new fifteen hundred candle power Mazda lamps with Westinghouse hollow spun concrete posts on Commonwealth avenue, between Brighton avenue and Warren street, Brighton. Twelve pendant type arc lamps were changed to the new type and unit at original locations and nineteen pendant type arc lamps were changed to the new type and unit and shifted to new locations.

On Blue Hill avenue, between Columbia road and Talbot avenue, Dorchester, four new arc lamps were installed, five arc lamps changed to the Mazda unit

fourteen hundred seventy-five candle power, and five new fourteen hundred seventy-five candle power Mazda unit installed. All the above units were installed with the boulevard type of wooden post.

On River street widening and construction, between Everett square, Hyde Park, and Blue Hill avenue, Mat-tapan, twenty-four fifteen hundred candle power Mazda lamps with Westinghouse hollow spun concrete posts were installed.

Respectfully,

JOSHUA ATWOOD,
Division Engineer.

HIGHWAY DIVISION — LIGHTING SERVICE.

FINANCIAL STATEMENT.

*Expenditures January 1, 1928, to December 31, 1928.**Electric Lighting:**Arc.*

Edison Electric Illuminating Company	\$525,266 37	
Charlestown Gas and Electric Company	27,025 76	
		\$552,292 13

Incandescent.

Edison Electric Illuminating Company	\$148,316 47	
Charlestown Gas and Electric Company	2,891 82	
Charlestown Gas and Electric Company fire alarm	353 95	
		151,562 24

Gas Lighting:

Boston Consolidated Gas Company	\$249,696 95	
Charlestown Gas and Electric Company	13,268 42	
Charlestown Gas and Electric Company fire alarm	603 68	
		263,569 05

Salaries and Wages:

Division engineer (part of)	\$1,250 00	
Clerk	2,431 94	
Lighting inspector	1,961 10	
		5,643 04

Automobile Expenses:

Gasolene, oil, etc.	\$93 24	
Registration	3 00	
Shoes and tubes, new and repairs, ...	9 65	
Supplies	1 80	
Repairs	83 49	
Storage	60 00	
		251 18

<i>Carried forward</i>	\$973,317 64
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<i>Brought forward</i>		\$973,317 64
<i>Construction:</i>		
Installing lamps and posts and removing and re-		
locating lamps, posts		1,530 64
<i>Office Expenses:</i>		
Printing	\$112 50	
Postage	24 00	
Stationery and periodicals	78 03	
		214 53
<i>Miscellaneous:</i>		
Travel expenses (car fares)	\$18 65	
Typewriter repairs and inspection	12 00	
Gas lamp posts and Mazda posts	2,345 20	
Globes and shade frames	81 55	
		2,457 40
Total		\$977,520 21
Less rebates on installations		324 45
Total		<u>\$977,195 76</u>

Revenue Credited to General Revenue.

Lighting Boston and Cambridge		
Bridges	\$1,328 38	
Damage to posts	498 51	
		<u>\$1,826 89</u>

The following is a statement of the work done during the year under the supervision of the Division Engineer.

Boulevard type white way lamps, both arc and Mazda, have been installed on Kneeland street, State street, Harrison avenue, Beverly street and Charlesgate, city proper; Dudley street, Guild row, Washington street, Dimock street, Fenway and Forsyth way, Parker street, Heath and New Heath streets and Warren street, Roxbury; Blue Hill avenue, between Columbia road and Talbot avenue, Southern Artery, Dorchester avenue, Charles street, Fernald terrace and Adams street, Dorchester; Marion street, East Boston; Washington street and Commonwealth avenue, Brighton; Brookside avenue, Centre street and Metropolitan avenue, West Roxbury; River street, Hyde Park and Dorchester; and in Sullivan square, Charlestown.

During the year 250 pendant type posts were changed to the boulevard type, and 28 pendant type posts changed

to concrete boulevard posts and 6 boulevard type posts changed to concrete boulevard type.

Petitions and requests for new lamps received from citizens and from officials, also complaints in relation to the Lighting Service have been investigated and attended to. All streets in the underground district prescribed for the year have been inspected and the necessary changes and additions have been made.

The number of miles of streets and ways lighted by this service is as follows:

Public streets and alleys	631.57
Public footways	1.36
Park roads, footways, private streets and alleys approximately	301.89
	934.82

During the year the following defects were reported by the police: Arc lamps 4,317; incandescent, 1,209, and gas lamps, 1,252.

There are in operation 22,041 arc, incandescent and gas lamps, divided as follows: 5,634 arc, 6,338 incandescent, 9,881 single mantle gas lamps and 188 single mantle fire alarm gas lamps.

LAMPS INSTALLED.

Magnetite arc lamps	113
Mazda lamps	920
Single mantle gas lamps	76
Single mantle gas lamps (fire alarm)	23
	1,132

LAMPS DISCONTINUED.

Magnetite arc lamps	* 572
Mazda lamps	† 114
Single mantle gas lamps	73
	759

* Five hundred forty magnetite arc lamps changed to 1,500 candle power series Mazda; 30 magnetite arc lamps changed to 1,475 candle power multiple Mazda.

† One 1,500 candle power series Mazda changed to magnetite arc lamp.

The following table shows the work of setting and repairing and altering lamp posts, bracket services, etc.:

	Set for Lamps.	Set in Place of Broken Posts.	Shifted to New Location.	Straight- ened.	Reset to Line and Grade.	Unused Posts Removed.	Repaired.	Relaid.	Laid.	Cleared.	Set in Place of Brackets.	Shades.
Arc posts (pendant).....	30	.....	4	.....	2	.....	.....	.....	.....	.....	.....	10
Mazda posts (pendant).....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cement posts (Mazda).....	88	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Boulevard posts (arc).....	82	.....	15	.....	13	.....	.....	.....	.....	.....	.....	.....
Boulevard posts (Mazda)...	25	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mazda fixtures.....	233	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	7
Gas posts.....	72	190	18	35	68	79	23	.....	.....	104	1	26
Gas brackets.....	.....	.....	1	.....	1	1	1	.....	.....	.....	.....	.....

The following table shows the number of lamps of various types in use on January 1, 1929, as compared with the number in use on January 1, 1928.

	January, 1929.	January, 1928.	Increase or Decrease.
Single mantle gas.....	9,881	9,878	3
Fire alarm gas.....	188	165	23
Magnetite series.....	5,634	6,093	459
Mazda.....	6,338	5,532	806
	22,041	21,668	373

STREET LAMP OUTAGES.

Rebates for lamps not lighted on schedule time or out before the proper time have been received on the various monthly bills as follows:

DATE.	Arc.	Mazda.	Gas.
January, 1928.....	179.29	5.87	20.00
February.....	123.97	4.89	21.08
March.....	123.12	3.17	16.91
April.....	58.25	1.11	8.26
May.....	51.60	5.47	5.59
June.....	71.33	2.77	3.91
July.....	83.13	2.77	4.54
August.....	112.19	4.36	4.63
September.....	133.49	2.20	9.77
October.....	106.37	2.15	14.57
November.....	128.71	2.55	10.03
December.....	145.14	4.13	8.65
	1,316.59	41.44	127.94

GAS LIGHTING.

There are 9,881 single mantle gas lamps and 188 single mantle fire alarm gas lamps.

The city furnishes the lamp-posts, the Gas Company set the lamp-posts and provide service pipes laid from the gas mains to the top of the posts, maintain all such pipes and posts in good condition and repair, furnish gas, lanterns, burners and all other necessary equipment including labor for lighting and care.

The Lighting Service provides for the gas, lighting and care of fire alarm signal lamps and the Fire Department for the posts, setting and repairing of same.

Gas Lamps.

Lighting Contract.	Gas District.	Number of Lamps.	Type of Lamp.	Rated Candle Power.	Gas Consumed per Hour.	Hours of Burning per Annum.	Cost of Gas per Lamp per Annum.	Cost per Lamp for Lighting and Care per Annum.	Total Cost per Lamp per Annum.
Boston Consolidated Gas Company.*	South Boston, East Boston, Dorchester, Roxbury, Brighton, West Roxbury.	9,376 165	Single mantle. Single mantle. F. A.	60 60	3 feet. 3 feet.	3,886.45 3,886.45	\$11 00 11 00	\$15 20 15 20	\$26 20 26 20
Charlestown Gas and Electric Company.*	Charlestown.....	505 23	Single mantle. Single mantle. F. A.	60 60	3 feet. 3 feet.	3,886.45 3,886.45	11 00 11 00	15 20 15 20	26 20 26 20

* Ten-year contract approved May 20, 1924.

There are 5,634 magnetite arc lamps, 386 40 candle power; 213 40 candle power; multiple two bulb fire alarm lights, 1,544 66 candle power; 3,145 80 candle power; 43 100 candle power; 79 132 candle power; 32 250 candle power; 12 528 candle power; 2 600 candle power; 23 950 candle power; 15 1,000 candle power; 122 1,475 candle power; 722 1,500 candle power Mazda lamps.

The electric companies provide and set the lamp-posts except the lamp-posts for Mazda lamps supplied from underground circuits, furnish lamps, overhead wires, underground conduits, cables and connections and all other necessary equipments and maintain them in good condition and repair.

The lighting rates for electric lamps are in accordance with the following table:

DESCRIPTION OF LAMPS.	Fixed Costs per Lamp per Year.	Running Cost per Lamp Hour.
40 candle power Mazda lamp, series *.....	\$10 00	.22 cent
40 candle power Mazda lamp, multiple †.....	10 80	.26 cent
66 candle power Mazda lamp, multiple.....	10 80	.26 cent
80 candle power Mazda lamp, series.....	10 80	.26 cent
100 candle power Mazda lamp, series.....	12 00	.30 cent
132 candle power Mazda lamp, multiple.....	13 50	.36 cent
250 candle power Mazda lamp, series.....	18 00	.6 cent
528 candle power Mazda lamp, multiple.....	31 00	1 cent
600 candle power Mazda lamp, series.....	31 00	1 cent
950 candle power Mazda lamp, multiple.....	32 00	1.3 cent
1,000 candle power Mazda lamp, series.....	34 00	1.4 cent
1,475 candle power Mazda lamp, multiple.....	36 00	1.5 cent
1,500 candle power Mazda lamp, series.....	36 00	1.5 cent

* This is the single bulb fire alarm lamp.

† This is the two-bulb fire alarm lamp.

A deduction at the rate of 1 cent per hour for lamps of 100 candle power or less and 5 cents per hour for all other lamps is made for outage.

Arc Lamps.

COMPANY.	Number of Lamps.	Connected.	Type of Lamps.	Type of Circuits.	Terminal.	Lighting Hours.	Cost of Lamp per Annum from December 7, 1924.
Edison Electric Illuminating Company.....	{ 1,766 3,580	Overhead. Underground.	Magnetite. Magnetite.	Series 6.6 amp. D. C. Series 6.6 amp. D. C.	528 528	3,828 3,828	\$93.42 93.42
Charlestown Gas and Electric Company.....	{ 226 82	Overhead. Underground.	Magnetite. Magnetite.	Series 6.6 amp. D. C. Series 6.6 amp. D. C.	528 528	3,828 3,828	93.42 93.42

NOTE.—In the above the candle power figures are the official designations. The wattage figures are here eliminated.

Mazda Lamps.

COMPANY.	Number of Lamps.	Type of Lamps.	Type of Circuits.	Candle Power.	Lighting Hours.	Cost of Lamp per Annum.
Edison Electric Illuminating Company.....	386	Mazda.	Series 6.6 amp. D. C.	40	3,828	\$18 42
	4,885	Mazda.	Multiple amp. D. C.	40	3,828	20 75
			Multiple amp. D. C.	66		
			Series.	80		
	43	Mazda.	Series.	100	3,828	23 48
	79	Mazda.	Multiple.	132	3,828	27 28
	32	Mazda.	Series 6.6 amp. D. C.	250	3,828	40 97
	12	Mazda.	Multiple amp. D. C.	528	3,828	69 28
	2	Mazda.	Series amp. D. C.	600	3,828	69 28
	23	Mazda.	Multiple.	950	3,828	81 76
Charlestown Gas and Electric Company.....	122	Mazda.	Multiple.	1,475	3,828	93 42
	701	Mazda.	Series.	1,500		
	17 F. A.	Mazda.	Series 6.6 amp. D. C.	40	3,828	20 75
		Mazda.	Series.	1,000	3,828	87 59
		Mazda.	Series.	1,500	3,828	93 42

NOTE.—In the above the candle power figures are the official designations. The wattage figures are here eliminated.

FINANCIAL STATEMENT, PAVING SERVICE.

MAINTENANCE.

Appropriation from taxes	\$1,681,190 42
Transferred from Sanitary Service	17,788 52
	\$1,698,978 94
Expended during the year	<u>\$1,698,978 94</u>

SPECIAL APPROPRIATIONS.

Highways, Making of:

Amount expended during the year	<u>\$625,493 23</u>
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DEPARTMENTAL EQUIPMENT.

Balance January 1, 1928	\$2,464 84
Expended during the year	0 00
Balance December 31, 1928	<u>\$2,464 84</u>

DOCK SQUARE AND FANEUIL HALL SQUARE IMPROVEMENT.

Expended during the year	<u>\$195 25</u>
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GARAGE, HANCOCK STREET YARD.

Balance, January 1, 1928	\$355 52
Expended during the year	0 00
Balance December 31, 1928	<u>\$355 52</u>

GRANOLITHIC SIDEWALKS.

Balance January 1, 1928	\$26,569 46
Appropriation from taxes	50,000 00
Transferred from appropriation for reconstructing and repairing streets by contract	50,000 00
	\$126,569 46
Expended during the year	91,476 86
Balance December 31, 1928	<u>\$35,092 60</u>

KNEELAND STREET IMPROVEMENT.

Expended during the year	<u>\$29,299 00</u>
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LAND, EAST BOSTON.

Balance January 1, 1928	\$640 00
Transferred to Kneeland street improvement	<u>640 00</u>

LOWELL STREET, NASHUA STREET AND CAUSEWAY STREET.

Expended during the year	<u>\$5,240 40</u>
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MORTON STREET IMPROVEMENT.

Expended during the year	<u>\$10,566 31</u>
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OAKLAND AND ASHLAND STREETS IMPROVEMENT.

Expended during the year	<u>\$165,381 16</u>
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PERMANENT STREET PAVEMENT.

Balance January 1, 1928	\$63,510 27
Expended during the year	<u>56,360 57</u>

Balance December 31, 1928	<u>\$7,149 70</u>
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RECONSTRUCTING AND REPAIRING STREETS BY CONTRACT.

Balance January 1, 1928	\$47,062 12
Appropriation from taxes	750,000 00
Transfers from Sanitary Service	18,500 00
Transfer from Sewer Service	6,300 00
Transfer from Sewerage Works, Charles River Basin	<u>516 70</u>

	\$822,578 82
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Transferred to granolithic sidewalks	<u>50,000 00</u>
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	\$772,578 82
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Expended during the year	<u>672,589 18</u>
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Balance December 31, 1928	<u>\$99,989 64</u>
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RIVER STREET, RECONSTRUCTION.

Expended during the year	<u>\$150,337 50</u>
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STREET SIGNS.

Balance January 1, 1928	\$14,058 09
Appropriation from taxes	25,000 00
Transfer from Sanitary Service	<u>5,000 00</u>

	\$44,058 09
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Expended during the year	<u>42,705 11</u>
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Balance December 31, 1928	<u>\$1,352 98</u>
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PAVING SERVICE.

SUMMARY OF EXPENDITURES.

Paving Service, maintenance	\$1,698,978 94
Highways, making of	625,493 23
Dock square and Faneuil Hall square improvement	195 25
Granolithic sidewalks	91,476 86
Kneeland street improvement	29,299 00
Lowell street, Nashua street and Causeway street	5,240 40
Morton street improvement	10,566 31
Oakland and Ashland streets improvement	165,381 16
Permanent street pavement	56,360 57
Reconstructing and repairing streets by contract, ...	672,589 19
River street reconstruction	150,337 50
Street signs	42,705 11
	<u>\$3,548,623 51</u>

INCOME.

Statement showing the amount of bills and cash deposited with the City Collector from January 1, 1928, to December 31, 1928, and credited to General Revenue.

Edgestone and sidewalk assessments	\$56,690 69
Permits	30,457 69
Labor, materials furnished, etc.	12,367 65
Total	<u>\$99,516 03</u>

AMOUNT PAID INTO THE CITY TREASURY
DURING THE YEAR.

Edgestone and sidewalk assessments	\$38,679 92
Permits	30,930 19
Labor, materials furnished, etc.	15,789 44
Total	<u>\$85,399 55</u>

HIGHWAY DIVISION — PAVING SERVICE.

Work Done by Contract, 1928.

	Old.	New.	Total Old and New.
Edgestone set.....	83,444 linear feet.	103,211 linear feet.	186,655 linear feet.
Crushed stone foundation for edgestone.....	.....	11,606 " "	11,606 " "
1 Concrete base laid.....	4,144 square yards.	322,802 square yards.	326,946 square yards.
2 Granite block paving laid, gravel joints.....	4,631 " "	332 " "	4,963 " "
3 Recut granite block paving laid, grout joints.....	.....	52,039 " "	52,039 " "
4 Second-hand granite block paving laid with grout joints.....	1,665 square yards.	4,061 " "	5,726 " "
5 Sheet asphalt pavement laid.....	1,672 " "	209,326 " "	210,999 " "
6 Bitulithic pavement laid.....	1,130 " "	110,815 " "	111,945 " "
Extra binder.....	.....	793 cubic yards.	793 cubic yards.
7 Artificial stone sidewalks laid.....	2,702 square yards.	160,807 square yards.	163,509 square yards.
Brick sidewalks laid.....	5,993 " "	404 " "	6,497 " "
Crushed stone and gravel sidewalks, laid.....	4,679 " "	833 " "	5,512 " "
Concrete base removed.....	.....	8,684 " "	8,684 " "
Telford base removed.....	.....	377 cubic yards.	377 cubic yards.
Walls removed.....	.....	171 " "	377 " "
Earth excavation.....	.....	78,251 " "	78,251 " "

Rock excavation.....	4,962	"	"	4,962	"	"
Filling furnished.....	8,643	"	"	8,643	"	"
Asphalt macadam pavement laid.....	3,404	square yards,		3,404	square yards,	
Surface patching.....	1,259	"	"	1,380	"	"
Loam furnished.....	593	cubic yards,		593	cubic yards,	
Loam seeded.....	31	square yards,		31	square yards,	
Covers, catch-basins and Bradley heads.....	1,085			1,085		
Wooden fence erected.....	434	linear feet,		434	linear feet,	
Iron fence erected.....	540	"	"	540	"	"
Drain pipe laid.....	101	"	"	101	"	"
Dry well constructed.....	1			1		
Slope paving laid.....	1,007	square yards,		1,007	square yards,	
Sea wall and fence constructed.....	1			1		

Explanations of Numerals on Preceding Pages.

1 Concrete base laid six (6) inches thick. Total concrete base laid.....	322,802 square yards.	322,802 square yards.
2 Granite block laid with gravel joints, formerly macadam roadway. Total granite block laid with gravel joints.....	332 square yards.	332 square yards.
3 Recut granite block laid, grout joints, formerly grout joints. Recut granite block laid, grout joints, formerly pitch joints Recut granite block laid, grout joints, formerly gravel joints Recut granite block laid, grout joints, formerly macadam Recut granite block laid, grout joints, formerly gravel Recut granite block laid, grout joints, formerly asphalt Total recut granite blocks laid with grout joints.....	9,578 square yards. 10,343 " " 18,130 " " 6,233 " " 7,007 " " 748 " "	52,039 square yards.
4 Second-hand granite block paving laid, grout joints formerly gravel joints. Second-hand granite block paving laid, grout joints, formerly macadam Total second-hand granite block paving laid, grout joints.....	3,612 square yards. 449 "	4,061 square yards.
5 Sheet asphalt pavement laid, formerly brick block pavement. Sheet asphalt pavement laid, formerly macadam pavement. Sheet asphalt pavement laid, formerly gravel roadway Sheet asphalt pavement laid, formerly wood block pavement. Sheet asphalt pavement laid, formerly bitulithic pavement Sheet asphalt pavement laid, formerly granite block, gravel joints Sheet asphalt pavement laid, formerly granite block, pitch joints Sheet asphalt pavement laid, formerly granite block, asphalt joints Total sheet asphalt pavement laid.....	30,013 square yards. 67,313 " " 79,388 " " 11,456 " " 825 " " 17,368 " " 1,262 " " 1,491 " "	209,326 square yards.
6 Bitulithic pavement laid, formerly macadam roadway. Bitulithic pavement laid, formerly gravel roadway Total bitulithic pavement laid.....	75,940 square yards. 36,005 "	111,945 square yards.
7 Artificial stone sidewalks laid with foundation. Artificial stone sidewalks laid on existing foundation. Total artificial stone sidewalks laid.....	51,458 square yards. 112,051 "	163,509 square yards.
8 Asphalt macadam pavement laid, formerly gravel roadway. Total asphalt macadam pavement laid.....	3,404 square yards.	3,404 square yards.

	Old.	New.	Total.
Edgestone set.....	32,062 linear feet.	7,479 linear feet.	40,041 linear feet.
Concrete base laid.....	1,487 square yards.		1,487 square yards.
Roadway, granite block, gravel joints.....	11,427 " "	9 square yards.	11,436 " "
Roadway, granite block, grout joints.....	16,216 " "	185 " "	16,401 " "
Gutter, granite block, gravel joints.....	8,628 " "	589 " "	9,217 " "
Gutter, granite block, grout joints.....	2,279 " "	149 " "	2,428 " "
Flagging crosswalk, gravel joints.....	384 " "		384 " "
Roadway, wood block, sand joints.....	5,053 " "		5,053 " "
Asphalt penetration macadam surface placed.....		193,495 square yards.	193,495 " "
Macadam surface patched.....	449,965 square yards.		449,965 " "
Asphalt blanket coat.....	36,770 " "		36,770 " "
Sheet asphalt surface patched *.....	2,463 " "		2,463 " "
Sheet asphalt surface patched †.....	14,702 " "		14,702 " "
Brick sidewalks laid.....	53,387 " "	100 square yards.	53,487 " "
Artificial stone sidewalks laid.....	7,111 " "	291 " "	7,402 " "
Sidewalk excavating, no sidewalks laid.....		1,007 " "	1,007 " "
Gravel or crushed stone sidewalks surfaced.....	195,783 square yards.		195,783 " "
Roadway excavating, no roadway constructed.....	4,642 cubic yards.		4,642 cubic yards.
Roadway excavating, roadway changed.....	600 " "		600 " "
Rock excavating.....		8 cubic yards.	8 " "
Grading (no pavement laid).....	3,056 square yards.	600 square yards.	3,656 square yards.
Brick block pavement laid.....	1,153 " "		1,153 " "
Concrete roadway laid.....	25 " "		25 " "
New style sign posts erected.....		1,272	1,272

* Patched with asphalt mixture from Brighton asphalt plant.

† Patched with bituroc, kyrocc, emulsified asphalt and stone, taric compound and stone, ameisite, etc.

Objects of Expenditures from the Various Appropriations, Classified by Districts, from January 1, 1928, to
December 31, 1928.

DISTRICTS.	Macadam Repairs.	Paved Street Repairs.	Removal of Snow.	Street Cleaning.	Edgestone and Sidewalk Repairs.	Street Work.	Schedule A, Miscellaneous.	Totals.
South Boston and Dorchester North.....	\$10,661 02	\$13,050 08	\$10,166 68	\$2,493 80	\$13,038 99	\$140,331 77	.....	\$189,742 34
East Boston and Breed's Island.	27,807 55	2,783 25	5,523 62	131 14	12,193 54	157,047 95	.....	205,487 05
Charlestown.....	11,905 36	3,263 18	7,938 74	2,301 10	10,419 52	94,881 22	.....	130,709 12
Brighton.....	40,499 17	352 49	9,087 93	31,917 58	9,475 86	247,123 09	.....	338,456 12
West Roxbury.....	45,526 15	1,289 47	16,368 61	29,912 29	14,445 50	328,261 06	.....	435,803 08
Dorchester.....	34,715 08	450 20	5,739 17	14,786 12	19,950 03	131,063 17	.....	206,703 77
Roxbury South and Jamaica Plain.....	58,294 47	2,855 63	21,648 74	57,593 19	31,567 58	164,074 90	.....	336,034 51
City Proper.....	37,492 50	25,055 69	42,734 54	157 35	54,126 01	407,372 67	.....	566,938 76
Ashmont.....	24,568 16	781 14	7,181 62	12,240 84	8,641 91	355,565 51	.....	408,979 18
Hyde Park.....	22,346 20	138 63	4,876 44	11,807 49	1,953 72	27,554 24	.....	68,676 72
Miscellaneous.....	.....	.....	.....	.....	.....	* 54,985 92	†\$606,106 94	661,092 86
Totals.....	\$313,815 66	\$50,019 76	\$131,266 09	\$163,340 90	\$175,812 66	\$2,108,261 50	\$606,106 94	\$3,548,623 51

* Includes street signs, \$43,767.71; artificial stone sidewalks, rebates, \$11,218.21.

† Includes artificial stone sidewalks, new and repairs, \$36,474.80; asphalt and bitulithic repairs, \$44,591.12; wood block repairs, \$10,695.48.

SCHEDULE A.

EXPENDITURES FOR FISCAL YEAR 1928.

Salary of division engineer (part of)	\$3,745	00
Salaries of office clerks and stenographers	9,254	68
Salaries of assistant engineers (office work)	23,724	30
Salaries of permit office clerks	13,724	73
Salaries of permit office inspectors	18,796	28
Salaries of engineering inspectors (office work)	19,548	46
Salaries of district inspectors	1,571	72
Salary of medical inspector (part of)	400	00
Medical attendance on injured employees (outside)	213	32
Salary of general foreman	3,025	76
Salary of chief veterinarian (part of)	500	00
Salary of inspector of horses	1,604	38
Pensions paid to veterans (retired)	4,316	82
Pensions paid to laborers (retired)	11,429	11
Compensation allowed injured employees	3,058	57
Vacations allowed laborers, mechanics, etc.	37,481	74
Holidays not including holidays charged to street accounts	97,321	38
Military duty	131	50
Postage	213	92
Printing	4,165	56
Stationery	754	29
Traveling expenses, car fares, etc.	1,110	34
Engineering supplies and incidentals	2,955	93
Stationery	\$1,070	45
Printing	647	05
Postage	114	08
Transit repairs	98	10
Miscellaneous	1,026	25
Supplies, etc., for laboratory	73	38
Artificial stone sidewalks, new and repairs by department force. (See reconstructing and repairing streets by contract)	36,474	80
Asphalt and bitulithic pavement repairs. Temporary repairs, labor, teaming, materials. (See reconstructing and repairing streets by contract)	44,591	12
Brick block repairs, labor, teaming, materials	1,479	02
Wood block repairs, labor, teaming, materials	10,695	48
Crosswalks repaired, not included elsewhere	364	67
Fence repairs	6,455	65
Plankwalk repairs	1,121	38
<i>Carried forward</i>	\$360,303	29

<i>Brought forward</i>	\$360,303	29
Edgestone, sidewalks and gutters (new) not included elsewhere	10,424	69
Rent of land, wharves, etc.	3,121	00
Taxes	198	72
Expenses of stables, including drivers, feeders, fodder, horse-shoeing, repairs to harnesses, wagons, carts, etc.	\$135,607	95
Amount earned by department teams	109,907	00
		25,700 95
Electric lighting at yards and stables	2,105	47
Gas lighting at yards and stables	308	50
Fuel, for heating offices, buildings and stables	4,622	14
Electric appliances, labor and materials, yards and stables	108	44
Rent of towels	178	20
Stoves, pipes, grates, etc.	27	73
Telephone rentals and tolls	1,955	99
Ice	120	77
Signs, making, repairing, putting up, etc.	27,835	96
Tools, hardware, etc., new, cost of repairing, etc., ...	32,497	90
Oil for lighting around defects, etc.	1,589	82
Expenses of yards, including salaries of foreman, clerks, yardmen, watchmen, tool wagons, etc., ...	71,635	55
Repairs of yard buildings, stables, sheds, shanties, etc.	16,118	72
Sanding icy and slippery streets	6,043	64
Repairing wharf at 521 Commercial street	12,248	14
Chests for Central Office, making of	36	00
Premium on surety bonds	18	00
Traverse street subway	1,526	20
Fence at Northern avenue	725	00
Fence at Newark street	550	39
South street footway, repairing	215	00
Franklin street subway, Allston, repairs	182	19
Repairs to and inspection of typewriters and adding machines	43	00
Repairs to snow dumps	225	95
Work done and materials furnished, individuals, corporations, etc.	3,208	04
Asphalt plant, South End	533	67
Miscellaneous	963	77
Photographs	16	00
Snow fence	322	00
Work done and materials furnished other services and departments	4,099	06
<i>Carried forward</i>	\$589,989	89

<i>Brought forward</i>		\$589,989	89
Meals		26	25
Moving Samuel Adams statue		1,650	00
Reinforcing boiler house and chimney (Southampton street)		910	00
Steam roller, Buffalo, Pitts		6,950	00
Placing lanterns on silent policemen		2,033	75
Automobiles and trucks, 7 automobiles and 3 trucks		17,205	87
Stone crusher, South End District, operating supplies, etc.		2,383	31
Garage, Albany street, employees' wages, fuel, gasoline, supplies, repairs, etc.		44,496	83
Garage, Hancock street, employees' wages, fuel, gasoline, supplies, repairs, etc.		15,206	93
Steam rollers:			
Cost of operating, repairs, supplies, etc.	\$28,664	67	
Amount earned	23,380	50	
			5,284 17
 Total			
			\$686,137 00
Credits:			
Automobiles:			
Amount earned by trucks	\$177,984	80	
Cost of operation, repairs, supplies, equipment	111,962	72	
			\$66,022 08
Asphalt plant, Brighton:			
Value of material used on streets	\$30,037	99	
Operating expenses, repairs, etc.	29,006	35	
			1,031 64
Stock:			
Materials delivered on streets, ...	\$171,829	62	
Cost of materials, \$130,099 24			
Labor handling and teaming	30,156	80	
			160,256 04
			11,573 58
Concrete mixers, snow loaders and tractors, cost of operating, repairs, etc.	\$7,802	24	
Amount earned	9,205	00	
			1,402 76
			80,030 06
 Total			
			<u>\$606,106 94</u>

Snow and Ice Removed by Contract from January 1, 1928, to December 31, 1928.

District.	Contractor.	Number of Loads.	Cubic Yards.	Cost per Cubic Yard.	Total Cost.	Remarks.
1.....	{ Hugh Nawn, Inc. J J. McCarthy & Co.....	No work. 1,037	9,776½	\$0 48 55	\$5,366 08	1928 contract. 1927 contract.
2.....	{ Leo J. Nawn, Inc. Coleman Brothers, Inc.....	209 No work.	1,521	55 50	836 55	1927 contract. 1928 contract.
3.....	{ B. E. Grant Company John J. Grant.....	865 No work.	8,332½	55 55	4,582 88	1927 contract. 1928 contract.
4.....	{ B. E. Grant Company John J. Grant.....	1,062 No work.	11,612	55 54	6,386 61	1927 contract. 1928 contract.
5.....	{ Ornae Company Joseph P. McCabe.....	No work. No work.	.....	60 49	.....	1927 contract. 1928 contract.
6.....	{ A. G. Tomasello & Son, Inc. A. G. Tomasello & Son, Inc.....	350 No work.	2,133	65 70	1,386 45	1927 contract. 1928 contract.
7.....	{ J. J. Loonie C. M. Callahan, Inc.....	266 No work.	2,449	55 50	1,346 95	1927 contract. 1928 contract.
8.....	{ J. B. O'Rourke Joseph B. O'Rourke.....	238 No work.	2,144½	50 55	1,072 25	1927 contract. 1928 contract.
9.....	{ Joseph A. Singarella Thomas J. McCue.....	250 No work.	2,139	65 45	1,390 35	1927 contract. 1928 contract.
10.....	{ D. M. Biggs & Co. Coleman Brothers, Inc.....	No work. No work.	.....	50 43	.....	1927 contract. 1928 contract.
11.....	{ Edward J. Byrne Coleman Brothers, Inc.....	538 No work.	5,665	58 45	3,285 70	1927 contract. 1928 contract.
12.....	{ A. DeStefano & Son, Inc David W. Norton.....	150 No work.	1,648	54 48	889 92	1927 contract. 1928 contract.

**The Number of Loads of Snow Removed from January 1, 1928, to
December 31, 1928.**

DISTRICT.	Single.*	Double.†	Auto Trucks.‡	Cubic Yards.	Cost.§
South Boston.....			523	5,753	\$6,880 98
East Boston.....	651		53	1,885	5,523 62
Charlestown.....	1,174			2,348	7,048 82
Brighton.....			963	10,593	9,087 93
West Roxbury.....	337	3,057	1,529	28,193	16,367 61
Dorchester.....	446	151	398	5,723	5,739 17
Roxbury.....	2,110	644	854	15,546	21,648 74
City Proper.....	199		2,103	29,410	19,800 42
Ashmont.....	1,064	673	418	8,745	7,181 62
Hyde Park.....	485	458	624	9,208	4,876 44
Totals.....	6,466	4,983	7,465	118,404	\$104,155 35

* Single loads, 2 cubic yards.

† Double loads, 3 cubic yards.

‡ Auto truck loads, 3 cubic yards to 14 cubic yards.

§ Includes cost of plowing gutters, cleaning sidewalks and picking ice not carted away.
Also automobile snow plows furnished by contractors.

**Loads of Dirt and Street Cleaning Removed from January 1,
1928, to December 31, 1928.**

DISTRICT.	Single. *	Double. †	Auto Truck. ‡	Cubic Yards.
South Boston.....	—	—	180	1,080
East Boston.....	24	—	—	24
Charlestown.....	339	—	—	339
Brighton.....	—	—	2,257	13,542
West Roxbury.....	1,872	2,231	1,683	16,432
Dorchester.....	7	—	389	2,341
Roxbury.....	3,094	1,290	794	10,438
South End.....	—	—	—	—
Ashmont.....	2,773	581	247	5,417
North End.....	—	—	—	—
Hyde Park.....	1,142	338	210	3,078
Totals.....	9,251	4,440	5,760	52,691

* Single loads, 1 cubic yard.

† Double loads, 2 cubic yards.

‡ Auto truck loads, 6 cubic yards.

New Edgestone and Brick Sidewalk Recapitulation for 1928.

DISTRICT.	Edgestone. Linear Feet.	Brick Sidewalk, Square Yards.
South Boston, Paving District, No. 1.....	296	66
East Boston, Paving District, No. 2.....	344	—
Charlestown, Paving District, No. 3.....	—	—
Brighton, Paving District, No. 4.....	1,624	—
West Roxbury, Paving District, No. 5.....	1,464	—
Dorchester, Paving District, No. 6.....	810	—
Roxbury, Paving District, No. 7.....	1,085	34
South End, Paving District, No. 8.....	—	—
Ashmont, Paving District, No. 9.....	543	—
North End, Paving District, No. 10.....	—	—
Hyde Park, Paving District, No. 11.....	1,100	—
Totals.....	7,266	100

New Granolithic Sidewalks Laid by Department Forces
During 1928.

DISTRICT.	Square Feet.	Location of Work.
South Boston.....	—	
East Boston.....	—	
Charlestown.....	—	
Brighton.....	—	
West Roxbury.....	—	
Dorchester.....	49	4 Wellesley park (Park street side).
Roxbury.....	—	
South End.....	111	Kneeland street.
Ashmont.....	—	
North End.....	93	97 South Market street.
Hyde Park.....	—	
Total.....	253	

PUBLIC WORKS DEPARTMENT — HIGHWAY DIVISION — PAVING SERVICE.

Maintenance of Macadam Streets.

Cost by Years of Resurfacing or Patching from February 1, 1924, to December 31, 1928.

	1924. ¹	1925. ²	1926. ³	1927. ³	1928. ³
Total length of macadam in miles.....	347.63	343.50	340.24	335.62	330.46
Total area of macadam in square yards.....	5,789,425	5,708,269	5,629,035	5,563,377	5,471,879
Total cost of resurfacing of macadam*.....	\$40,032 79	\$111,541 74	\$100,246 23	\$119,795 43	\$177,690 43
Total cost of patching of macadam †.....	\$251,026 22	\$231,916 92	\$305,664 95	\$299,546 48	\$316,233 52
Cost of resurfacing per mile over entire mileage.....	\$115 16	\$324 72	\$294 64	\$356 94	\$537 71
Cost of resurfacing per square yard over entire area.....	\$0 0069	\$0 0195	\$0 0178	\$0 0215	\$0 0325
Length of macadam resurfaced yearly in miles.....	1.905	4.939	4.893	6.6506	9.692
Cost per mile of macadam resurfaced yearly.....	\$21,014 58	\$22,583 89	\$20,487 64	\$18,012 73	\$18,333 72
Area of macadam resurfaced yearly in square yards.....	27,461	82,648	67,419	89,569	128,495
Cost per square yard of macadam resurfaced yearly.....	\$1 46	\$1 34	\$1 49	\$1 337	\$1 383
Area of macadam patched yearly in square yards.....	452,280	329,801	450,702	479,544	467,731
Cost per square yard of macadam patched yearly.....	\$0 555	\$0 703	\$0 678	\$0 625	\$0 65
Binders used in resurfacing (per cent):					
Water.....	.0000	.0000	.0000	.0000	.0000
Tax preparation.....	.0000	.0084	.0000	.0000	.0000
Asphalt preparations.....	1.0000	.9916	1.0000	1.0000	1.0000

* By resurfacing is meant entire area of street excavated and resurfaced with not less than four inches of new material.

† By patching is meant scattered areas of depressions, etc., which are filled with new material from a depth of one-half inch up, and in some cases blanket coated with bituminous binder.

‡ 1924 — from February 1 to January 31.

‡ 1925 — from February 1 to December 31 — eleven months.

‡ 1926, 1927, 1928 — from January 1 to December 31.

STREET OPENINGS.

Under classes 1 and 2 of the schedule of permit fees, permits were issued for openings in public ways, as follows:

TO WHOM ISSUED.	Number of Permits.	Length in Feet.
Sewer and Water Service.....	3,000	36,000
Boston Consolidated Gas Company.....	1,987	49,675
Boston Elevated Railway.....	188	28,200
Dedham and Hyde Park Gas Company.....	140	3,500
Edison Electric Illuminating Company.....	3,995	279,650
Miscellaneous.....	3,076	153,800
New England Telephone and Telegraph Com- pany.....	740	55,500
Emergency permits used and returned.....	776	19,400
	13,902	625,725

Making a total length of openings approximately, 118 miles.

Total of all permits issued, 21,217.

Permits for other than street openings have been issued as follows:

Cleaning snow from roof	29
Erecting and repairing awnings	374
Erecting and repairing buildings	1,258
Painting or minor repairs on buildings	3,553
Moving buildings in street	17
Feeding horses in streets	14
Placing signs flat on buildings	1,327
Raising and lowering safes, etc.	22
Emergency for above	359
Special permits	362
	<u>7,315</u>

The fees from issuing permits amounted to \$30,457.69.

Of this amount, \$24,373.97 was deposited with the City Collector and \$6,083.72 was billed to public service corporations.

BONDS.

There are now on file, 2,936 surety bonds, in amount of one, three and twenty thousand dollars, covering the city against claims for damages, etc., through the use of permits.

PUBLIC WORKS DEPARTMENT

HIGHWAY DIVISION—PAVING SERVICE—DETAIL OF WORK DONE BY CONTRACT AND CHARGED TO APPROPRIATION "GRANOLITHIC SIDEWALKS."

[illegible]

¹ Credit, old briefs

+ Hauling edge: 4000

³ Teamwork

* Paid to J. P. Shea & Co., \$11.82

¹ Paid to H. Pensavalle & Co., \$63.08.

PUBLIC WORKS DEPARTMENT.

HIGHWAY DIVISION—PAVING SERVICE—DETAIL OF WORK DONE BY CONTRACT AND CHARGED TO APPROPRIATION "HIGHWAYS, MAKING OF"

[illegible]

² Labor, etc., by Department force.

4 Labor.
5 General subtotals

PUBLIC WORKS DEPARTMENT.

HIGHWAY DIVISION—PAVING SERVICE—DETAIL OF WORK DONE BY CONTRACT AND CHARGED TO "SPECIAL APPROPRIATION."

No.	STREET	From	To	Contractor	Pavement	Length, Linear Feet	Area, Square Yards	Total Cost	Amount Paid to Contractor	MATERIALS.								EXPENSES.					WORK DONE						Progress
										FOOTSTONE.		GRANITE BLOKS.		SIDEWALK BRICK.		MISCELLANEOUS.		Engineering.	Inspection.	Traveling, etc.	Advertising.	Miscellaneous.	Excavation and Filling.	Edging Set and Reset.	Brick Sidewalk Laid and Retard.	Roadway Paved and Repaved.	Artificial Stone Sidewalk Laid.	Miscellaneous.	
										Cost.	Quantity	Cost.	Quantity	Cost.	Quantity	Cost.	Quantity						Cubic Yards	Linear Feet	Square Yards	Square Yards	Square Feet.		
1	Duck square and Leland Hall square improvements							\$105 25	* \$179 25									\$16 00											Work done in 1927
2	Kneeland street improvement	Washington street	Atlantic avenue.	M. F. Gaddis	Widened and paved with recut granite block.	1,792	13,417	32,709 66	27,405 98	\$615 36		\$1,437 96		\$331 20		* \$1,130 16		644 19	\$651 94	\$43 85				4,457	722	7,128	21,230		Completed August 25, 1926
3	Lowell street, Nashua street and Cusumway street							5,568 51		230 25				1 20		* 5,208 50		448 00		9 40									To be widened
4	Morton street improvement	Druid street	Washington street	Charles Capone	Grading	1,613	14,318	10,566 31	8,557 31							* 800 00		726 11	416 14	13 75			6,300					Completed July 28, 1925	
5	Oakland and Ashland street improvement							185,386 00		15,211 03						27 00		6,191 10	3,237 70	126 60	\$46 25	* \$50 19							
	Ashland street.	Washington street	Hyde Park avenue.	M. DeMattos	Sheet asphalt	3,363	16,527		53,173 01														9,160	6,839	14,921	52,812		Unfinished.	
	Ashland street	Wilnot street	Harvard street	A. DeStefano & Son.	Bitulthor	2,768	12,620																3,106	1,584	3,355	7,320		Unfinished.	
	Oakland street	Harvard street	Richmond road.	A. DeStefano & Son.	Bitulthor	2,980	21,680		\$1,768 90														8,330	5,875	16,730	48,806		Unfinished.	
	Ashland street and Oakland street			William J. Barry	Grading				6,631 28																			Work done in 1927	
6	River street reconstruction	Mattapan square, to 50 feet west of Massena street, and from Everett square to 1.16 feet east of George street.		J. C. Coleman & Sons Company	Bitulthor	7,169	32,391	150,338 30	136,615 23	0,140 73						* 196 00		3,225 51	1,907 42	134 70		* 116 77	3,600	13,405	32,424	92,230		Completed September 3, 1925	
7	Street signs															* 374 00 * 12,471 64 * 4,021 62 * 11,627 70 * 12,549 77		2,663 09		50 00									

¹ Tearing down buildings, final payment.
² Labor, teaming, etc. by department forces.
³ Amount paid to J. C. Coleman & Sons Co., under contract.

* Photographs.
 * Steam roller.
 * Expert services.

* Ornamental vehicles and logs.
 * Signs.
 * Tools, etc.

DETAIL OF WORK DONE BY HIGHWAY DIVISION—PAVING SERVICE

				Work Done.												Cost of Labor.													
STREET.	From	To	Total Cost.	Work Done.												Cost of Labor.													
				MACADAM RESURFACED.	DEPTH.	ROADWAY PAVED AND REPAVED.	EDGESTONE SET AND RESET.	GUTTERS PAVED AND REPAVED.	BRICK SIDEWALKS LAID AND REPAVED.	CURBED STONE SIDEWALKS.	CROSSWALKS LAID AND REPAVED.	Square Yards.	Square Yards.	Square Yards.	Square Yards.	Engineering.	Inspection.	Edgestone Excavation.	Edgestone Setting and Resetting.	Macadam Excavation.	Macadam Spreading.	Gutter Excavation.	Gutter Paving and Repaving.	Paved Roadway Excavation.	Block Paving and Repaving.	Crosswalk Excavation.	Crosswalks, Laying and Relaying.	Brick Sidewalk Excavation.	
1	Ardale street.	Centre street.	Walter street.	\$3,209 40	3,626	4 5																							
2	Arlington street.	Parsons street.	About 500 feet westerly.	1,228 09	1,042	4 5						657																	
3	Arthur street.	North Beacon street.	Highborn street.	2,312 86	880	4 5																							
4	B street.	West First street.	West Broadway.	2,478 92	1,553	4 5																							
5	Bickenstaff street.	Haviland street.	Astor street.	2,873 62	1,724	4 5						120																	
6	Brickwood street.	Washington street.	Croft street.	2,611 26	2,389	4 5																							
7	Blue Hill avenue.	Washington street.	Angell street.	1,297 89																									
8	C street.	West Broadway.	West First street.	3,802 40	2,265	4																							
9	Cornet street.	Washington street.	Walnut avenue.	5,825 65	4,300	8																							
10	Codman park.	Townsend street.	688 feet south of Townsend street.	2,180 94	2,023	8																							
11	Columbia road.	Covington street.	Freble street.	7,854 97	5,333 1	4						10																	
12	Conley street.	Tonnan street.	Old Colony Parkway.	2,530 03	1,294	4																							
13	Correll street.	Washington street.	Poplar street.	6,191 01	2,290	4																							
14	Cottage street.	Porter street.	Maverick street.	2,453 99	3,422	4 2																							
15	Dania street.	Quincy street.	Dewey street.	2,916 40	1,721	5																							
16	Dana avenue.	Hyde Park avenue.	Loring street.	7,388 33	4,333 1	4																							
17	Dewey street.	Blue Hill avenue.	Howard avenue.	1,038 18	2,300	4																							
18	East Fourth street.	I street.	K street.	2,656 49	1,911 1	4																							
19	Euna street.	North Beacon street.	Elmire street.	4,425 30	3,634	5																							
20	F street.	West Broadway.	Beacon street.	4,009 65	1,923 1	4						175																	
21	Fairmount avenue.	45 feet east of River street.	Beacon street.	517 88																									
22	Fayston street.	Blue Hill avenue.	Massachusetts street.	2,668 84	3,683	4																							
23	Fremont street.	Napomet avenue.	Old Colony Parkway.	4,214 94	2,664	4						47 9																	
24	Georgia street.	Blue Hill avenue.	Elm Hill avenue.	2,587 98	2,587	4																							
25	Groton avenue.	Bridge over Neponset river.	Adams street.	3,140 14	1,280	4 5																							
26	Grove street.	Washington street.	the Dedham inn.	6,452 23	4,875	5																							
27	Haviland street.	Massachusetts avenue.	Hemmenway street.	2,240 88	1,440	6																							
28	Hyde Park avenue.	Upper Walk Hill street.	Ashland street.	12,559 30	10,000	4																							
29	Ingersole street.	Blue Hill avenue.	Normandy street.	1,310 64	1,517	5																							
30	Joy street.	Cambridge street.	Beacon street.	8,871 00	2,884	4						2,250																	
31	K street.	East First street.	East Third street.	3,787 28	1,947 2	5																							
32	Kenrick street.	Lake street.	60 feet west of Lamb street.	5,540 78	2,626	6																							
33	Layland street.	East Cottage street.	Burgess street.	1,822 30	1,800	4																							
34	Lynde street.	Cambridge street.	Green street.	1,069 98	520	4 5						350																	
35	Lynde street.	Centre street.	Wild street.	6,278 11	5,510	4 5																							
36	Maple street.	Seaver street.	Georgia street.	4,196 03	3,700	4																							
37	Marine road.	I street.	K street.	3,065 99	1,950	4																							
38	Mt. Ida road.	Rowdow street.	Holmes avenue.	302 09																									
39	Massachusetts avenue.	Hemmenway street.	Hemmenway street.	2,007 39	1,788	5																							
40	Norway street.	61 feet south of Columbia road.	East Cottage street.	2,717 73	1,880	4						23																	
41	Pod street.	Short street.	Brookline inn.	3,539 41	3,532	4 5																							
42	Prescott street.	Bremen street.	Wood Island.	3,408 65	3,200	4																							
43	Ridgely street.	Columbia avenue.	Marcella street.	2,048 90	2,068	6																							
44	River street.	Washington street.	Temple street.	5,774 90																									
45	Rockland street.	Walnut avenue.	Warren street.	2,381 93	1,473	6						1,088																	
46	Rutherford avenue.	Chapman street.	Devere street.	12,362 64								4,722																	
47	Ruthven street.	Elm Hill avenue.	Walnut avenue.	5,247 67	6,310	5																							
48	Savennas street.	Centre street.	Elm street.	3,152 18	3,382	4																							
49	Templeton street.	Dorchester avenue.	Florida street.	7,153 33	2,975	4 5																							
50	Thatcher street.	Metropolitan avenue.	75 feet east of Greenwood street.	2,327 40	1,838	4																							
51	Vermont street.	Corey street.	Mt. Vernon street.	4,737 58	3,765	6																							
52	Washington street.	Armadine street.	Valley road.	6,121 08	4,106	4																							
53	Waverly street.	Warren street.	Blue Hill avenue.	2,850 64	2,856	4																							
54	West Third street.	B street.	Dorchester street.	14,360 95	7,833 1							2,422																	
55	Westville street.	Rowdow street.	Corwin street.	2,966 71	5,032	4																							
56	Willow street.	Centre street.	Wild street.	7,120 65	4,660	6																							
57	Woodbury street.	Washington street.	Shawmut avenue.	2,747 85																									
58	Woodhill street.	Dana street.	Beyond Harvard avenue.	505 92	978	4						658																	

1 Tractor.
 2 Blanket coated with asphalt (square yards).
 3 Cost of filling (105 cubic yards).

* Compressor.
 * Watchman.
 * Grouting.

THE FORCE—CHARGED TO APPROPRIATION FOR MAINTENANCE.

7 Nails.
 8 Oil.
 9 Concrete base.

¹⁰ Credit old bricks.
¹¹ Cost of wood block roadway excavation.
¹² Cost of wood block roadway paving.

PUBLIC WORKS DEPARTMENT.

HIGHWAY DIVISION—PAVING SERVICE—DETAIL OF WORK DONE BY CONTRACT AND CHARGED TO APPROPRIATION "RECONSTRUCTING AND REPAIRING STREETS BY CONTRACT."

No.	Street.	From	To	Contractor.	Pavement.	Length, Linear Feet.	Area, Square Yards.	Total Cost.	Amount Paid to Contractor.	MATERIALS.				EXPENSES.				WORK DONE.						REMARKS.	
										ROOSTONE.	GRANITE BLOCK.	SIDEWALK BRICK.	MISCELLANEOUS.	Engineering.	Inspection.	Traveling, etc.	Advertising.	Miscellaneous.	Excavation and Filling.	Erection of Road and Road.	Brick, Side and End Road.	Roadway Improved and Repaved.	Artificial Stone, Walk and Road.		Miscellaneous.
1	Alford street	Main street	Malden Bridge	Walsh & Co.	Reest granite block	1,229	8,904	\$2,941.54	\$2,922.00																Work done in 1927
2	Adams street	Dorchester avenue	Park street	B. E. Grant Company	Sheet asphalt	550	2,765	885.82	875.38																Completed August 15, 1928
3	Arington street	Washington street	Stewart street	J. F. Kennedy Construction Company	Sheet asphalt	1,218	71	11,218.31	11,218.31																Work done in 1928
4	Arnold street	Penobscot square	145 feet southerly	S. J. Tomassello	Reest granite block	92	13.66	13.66	13.66																Completed July 21, 1928
5	Artificial stone sidewalks	Dorchester avenue	Washington street	S. J. Tomassello	Reest granite block	92	13.66	13.66	13.66																Completed July 21, 1928
6	Ashmont street (north side)	Massachusetts avenue	Washington street	J. F. Kennedy Construction Company.	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
7	Ashmont street (south side)	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
8	Bail street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
9	Benson street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
10	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
11	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
12	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
13	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
14	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
15	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
16	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
17	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
18	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
19	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
20	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
21	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
22	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
23	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
24	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
25	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
26	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
27	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
28	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
29	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
30	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
31	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
32	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
33	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
34	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
35	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
36	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
37	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
38	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
39	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
40	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
41	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
42	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
43	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
44	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
45	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
46	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
47	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
48	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
49	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
50	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
51	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
52	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
53	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
54	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
55	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
56	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
57	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
58	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
59	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
60	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
61	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
62	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
63	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
64	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt	503	98	503.98	503.98																Work done in 1926
65	Beverly street	Massachusetts avenue	Washington street	A. DeStefano & Son	Sheet asphalt																				

* Credit, old sidewalk bricks

* Credit, old granite blocks.

* Credit, bricks, blocks and edgestone, \$627.

PUBLIC WORKS DEPARTMENT.

HIGHWAY DIVISION—PAVING SERVICE—DETAIL OF WORK DONE BY CONTRACT AND CHARGED TO APPROPRIATION "PERMANENT STREET PAVEMENT."

PRJECT.	From	To	Contractor.	Pavement.	Length, Linear Feet.	Area, Square Yards.	Total Cost.	Amount Paid to Contractor.	MATERIALS.								EXPENSES.					WORK DONE.					Remarks.
									EDGESTONE.		GRANITE BLOCK.		SPECIAL BRICK.		MISCELLANEOUS.		Engineering.	Inspection.	Traveling, etc.	Advertising.	Miscellaneous.	Excavation and Filling.	Edgework set and surf.	Brick Side-walk Laid and Rehd.	Roadway and Repaved.	Artificial Stone Side-walk Laid.	
									Cost	Quantity.	Cost	Quantity.	Cost	Quantity.	Cost	Quantity.												Cube Yards.	Linear Feet.	Square Yards.	Square Yards.	Square Feet.
1	Almsworth street	Centre street	South street	J. J. McCarthy & Co.	Repairing artificial stone walks	914	1,279	\$239.49	\$239.49																		Work done in 1927
2	Ardale street	Centre street	Centre street	J. J. McCarthy & Co.	Repairing artificial stone walks	1,598	2,238	548.07	548.07																		Work done in 1927
3	Boylston street	Tremont street	Acorn Charles street	John McCourt Company				108.49	111.78																		Work done in 1927
4	East and West Brookline streets	Albany street	Washington and Warren streets	Joseph A. Singarella				1,910.45	1,747.01																		Work done in 1927
5	Cambridge street	Mass street	Somerville line					11,318.70																			Work done in 1927
6	Codman street	Southern Artery	260 feet easterly	M. McGinnis & Co.	Grading	260	1,444	1,828.52	1,538.10																		Work done in 1928
7	Columbus avenue	Dartmouth street	Northampton street	M. F. Gaddis	Sheet asphalt	2,921	18,500	1,836.37	4,645.14																		Completed October 13, 1928
8	Dundee street	Massachusetts avenue	Farmington road	M. F. Gaddis	Sheet asphalt	823	2,365	642.80	576.07																		Work done in 1927
9	East Broadway	Centre street	Centre street	M. DelMastro	Rehabilitate	2,732	15,094	9,043.74	8,737.12																		Work done in 1927
10	Fletcher street	Centre street	Centre street	M. F. Gaddis	Sheet asphalt	1,772	4,640	585.52	547.63																		Work done in 1927
11	Fletcher street	Centre street	Centre street	J. J. McCarthy & Co.	Repairing artificial stone walks	1,823	374	122.69	122.20																		Work done in 1927
12	Fletcher street	Centre street	Centre street	J. J. McCarthy & Co.	Repairing artificial stone walks	1,848	773	350.21	350.21																		Work done in 1927
13	Fremont street	Dorchester avenue	183 feet north of Beech street	S. J. Tomasello	Recut granite block	2,650	9,612	5,883.30	5,655.12	\$5.00																	Completed May 19, 1928
14	Harold street	Walnut avenue	Old Colony Parkway	M. F. Gaddis	Sheet asphalt	3,750	9,800	1,758.72	1,655.98																		Work done in 1927
15	Harrison avenue	Northampton street	Seaver street	M. F. Gaddis	Sheet asphalt	417	1,041	214.45	157.46																		Work done in 1927
16	James street	East Brookline street	125 feet southerly	Joseph A. Singarella	Sheet asphalt	440	808	970.40	4,331.75																		Work done in 1927
17	Mass street	Centre street	400 feet southerly	Central Construction Company	Sheet asphalt	440	808	970.40	920.41																		Work done in 1927
18	Moskoff street	Columbia road	Columbia road	J. J. McCarthy & Co.	Repairing artificial stone walks	1,105	735	269.42	209.42																		Work done in 1927
19	Newton street	Dorchester avenue	Boston street	Joseph A. Singarella	Sheet asphalt	820	2,616	1,613.23	1,414.68																		Completed October 30, 1928
20	Quincy street	Farmington road	Severn street	M. F. Gaddis	Sheet asphalt	211	537	104.46	86.43																		Work done in 1927
21	Salmon street	Walton street	Walton street	J. J. McCarthy & Co.	Repairing artificial stone walks	1,185	667	290.62	290.62																		Work done in 1927
22	Shelton street	Walton street	Walton street	J. J. McCarthy & Co.	Repairing artificial stone walks	709	709	285.98	285.98																		Work done in 1927
23	Tyndale street	Columbia road	Finch street					14.00																			Work done in 1927
24	Washington street	Washington street	Massachusetts avenue	J. J. McCarthy & Co.	Repairing artificial stone walks	1,917	1,970	760.93	760.93																		Work done in 1927
25	Washington street	Washington street	Massachusetts avenue	J. C. Coleman & Son	Sheet asphalt	3,062	25,674	18,244.20	18,094.47																		Completed July 7, 1928
26	Washington street	90 feet north of Beattie street	83 feet south of Cornhill	S. J. Tomasello	Recut granite block	547	1,651	1,137.40	1,137.40																		Work done in 1927

* See "Reconstructing and Repairing Streets by Contract."

APPENDIX D.

REPORT OF THE DIVISION ENGINEER OF THE
SANITARY DIVISION.

BOSTON, January 1, 1929.

MR. JAMES H. SULLIVAN,
Commissioner of Public Works.

DEAR SIR,—I submit herewith a statement of the activities and expenditures of the Sanitary Division for the year ending December 31, 1928.

The maintenance expenditures of the Sanitary Division follow:

Sanitary Division	<u>\$3,101,885 95</u>
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SANITARY SERVICE.

With the establishment of a follow-up system on complaints and the adoption of a routing system in the various districts, the number of complaints have reduced very materially during the year.

While the question of the long haul to the inland dumps reducing the number of loads is one of our greatest handicaps, nevertheless, this work of removal of ashes and garbage must be carried on without any delay, and this question of regular collections presents one of the greatest problems the department has to contend with.

STREET CLEANING SERVICE.

The shortage of men in the Street Cleaning Service presents a very serious problem in the cleaning of our suburban streets. While the motor-driven pick-up sweepers have helped very materially on the smooth surface streets, this is a very different problem on the paved streets where it is a hoe, broom and shovel proposition.

This means an adequate force of street cleaning men available at all times to cover this large area of paved streets.

The problem of taking care of the old abandoned automobile bodies left on public streets and public alleys is growing more acute each year, and some means will have to be devised to handle this problem.

Yours respectfully,

D. J. LYNCH,
Assistant Engineer.

SANITARY SERVICE.

FINANCIAL STATEMENT.

Appropriation	\$3,168,974 02
Transferred to other appropriations	67,088 07
	\$3,101,885 95
Expended by Sanitary Service, \$2,087,116 27	
Expended by Street Cleaning and	
Oiling Service 1,014,769 68	
	\$3,101,885 95

INCOME.

Statement showing the amount of bills and cash deposited with the City Collector from January 1, 1928, to December 31, 1928, and credited to General Revenue.

Tickets and bills for the removal of ashes and waste	\$79,196 85
Sale of manure	3,576 73
Sale of old material	107 00
Sign	27 59
Miscellaneous	63 13
Total	\$82,971 30

AMOUNT PAID INTO THE CITY TREASURY DURING THE YEAR.

Removal of ashes and waste	\$79,196 85
Sale of manure	2,698 60
Miscellaneous	170 13
Total	\$82,065 58

Total Cost of House Dirt, Waste, Rubbish and Offal, 1928.

Salaries, division engineer, supervisor, chief veterinary and medical inspector	\$9,327 01
Office supplies and expenses	2,856 08
Ashes, waste and rubbish account	1,319,434 36
Carried forward	\$1,331,617 45

<i>Brought forward</i>	.	.	.	.	.	.	\$1,331,617 45
House offal account	.	.	.	.	.	.	628,585 96
Retired veterans' pensions	.	.	.	.	.	\$809 25	
Retired laborers' pensions	.	.	.	.	.	4,999 14	
							5,808 39
Total	.	.	.	.	.	.	\$1,966,011 80

CONSTRUCTION REPAIRS AND HORSESHOEING
ACCOUNT.

Expended for labor	.	.	.	.	\$108,637 59	
Expended for stock	.	.	.	.	33,640 66	
						142,278 25
						\$2,108,290 05

WORK DONE FOR OTHER SERVICES.

Street Cleaning Service	.	.	.	.	.	21,173 78
Total	.	.	.	.	.	<u>\$2,087,116 27</u>

Items of Expenditure for the Year 1928.

Salary, supervisor.....	\$4,010 96
Salary, senior engineer.....	2,766 05
Salary, medical inspector.....	1,300 00
Salary, chief veterinary (in part).....	1,250 00
Salaries, foremen.....	23,960 25
Salaries, yard clerks.....	2,874 24
Labor, collecting and disposing of house dirt and ashes.....	670,019 65
Labor, collecting and disposing of waste and rubbish.....	34,629 86
Labor, collecting and disposing of house offal.....	355,706 07
Labor and stock at stables and yards.....	89,685 59
Hired teams on ashes.....	17,734 50
Contractor on ashes, East Boston, Brighton, West Roxbury, Dorchester and Hyde Park.....	269,687 80
Contractor on offal, East Boston, Brighton, West Roxbury, Dorchester and Hyde Park.....	135,200 00
Holidays, pay allowed.....	133,781 51
Vacations, pay allowed.....	26,665 68
Grain.....	14,837 08
Hay and straw.....	15,361 49
Medical attendance and pay allowed injured employees.....	9,316 00
Veterinary services and medicine.....	193 13
Outside wheelwright, blacksmith, horseshoeing, etc.....	10,909 13
Labor and stock, wheelwright, blacksmith, painting, etc.....	118,553 34
Repairs to stables and sheds.....	15,034 91
Fuel.....	3,119 78
Gas.....	616 84
Electric light and power.....	3,970 12
Printing, stationery, office supplies, advertising.....	2,856 08
Automobile expenses.....	114,588 20
Rents.....	1,980 00
Telephone tolls and rentals.....	879 62
Retired veterans' pensions.....	809 25
Retired laborers' pensions.....	4,999 14
Total.....	\$2,087,116 27

Amount Expended for the Collection and Disposal of Ashes, Garbage, Waste and Rubbish, by Districts, 1928.

Districts.	Popula- tion.	ASHES.		GARBAGE.		WASTE AND RUBBISH.		Total Cost.	Total Cost Per Capita.
		Cost.	Per Capita.	Cost.	Per Capita.	Cost.	Per Capita.		
1. South Boston.....	73,913	\$84,161 29	\$1.1386	\$37,111 31	\$0.5021	\$225 00	\$0.0031	\$121,497 60	\$1.6451
2. East Boston.....	67,529	40,865 59	0.6051	13,200 33	0.1954	.....	.....	54,065 92	0.8005
3. Charlestown.....	38,961	47,777 63	1.2263	10,230 23	0.2626	.....	.....	58,007 86	1.4889
4. Brighton.....	49,555	61,648 31	1.2444	33,258 31	0.6711	.....	.....	94,906 62	1.9155
5. West Roxbury.....	61,799	62,318 59	1.0084	37,001 79	0.5987	.....	.....	99,320 38	1.5971
6. Dorchester.....	164,210	154,035 44	0.9380	93,077 03	0.5668	.....	.....	247,112 47	1.5048
7. Roxbury.....	130,603	190,685 10	1.4600	100,163 20	0.7669	17,612 80	0.1349	308,461 10	2.3618
8 and 9. South End and Back Bay...	119,430	269,694 44	2.2581	88,443 62	0.7405	38,269 80	0.3204	396,407 86	3.3190
10. North and West Ends.....	75,800	142,002 86	1.8734	31,755 55	0.4189	13,099 90	0.1728	186,858 31	2.4651
11. Hyde Park.....	20,364	15,839 95	0.7778	5,713 91	0.2805	.....	.....	21,553 86	1.0583
12. Disposal station.....	.....	178,231 97	.....	178,630 68	.....	2,985 69	.....	359,848 34	.....
Totals.....	802,164	\$1,247,261 17	.....	\$628,585 96	.....	\$72,193 19	.....	\$1,948,040 32	.....

House Dirt and Ashes Removed.

YEARS.	Loads.	Cubic Yards.	Tons.
1924 *	276,818	1,099,636	448,094
1925†	239,840	984,287	401,087
1926	232,670	1,035,160	421,828
1927	182,658	1,140,579	464,787
1928	175,266	1,080,421	440,271

House Offal Removed.

YEARS.	Loads.	Cubic Yards.	Tons.
1924*	50,584	142,822	84,264
1925†	46,093	137,597	81,176
1926	48,738	161,551	95,315
1927	46,002	183,110	108,034
1928	39,620	185,095	109,207

Waste and Rubbish Removed.

YEARS.	LOADS.		Cubic Yards.	Tons.
	Paper Carts.	Market Wagon.		
1924 *	1,901	4,601	53,443	6,390
1925†	1,772	4,192	47,712	5,851
1926	1,783	4,438	49,768	6,131
1927	1,722	4,068	46,320	5,681
1928	1,188	3,621	38,772	5,284

Loads of Material Collected.

YEARS.	Ashes.	Offal.	Rubbish.	Total Loads.	Tons.
1924 *	276,818	50,584	6,502	333,904	538,748
1925†	239,840	46,093	5,964	291,897	488,114
1926	232,670	48,738	6,221	287,629	523,274
1927	182,658	46,002	5,790	234,450	578,502
1928	175,266	39,620	5,284	220,203	554,762

* During the year 1924 the financial year was from February 1 to January 31 of following year.

† 11 months.

Summary.

MATERIAL.	Cubic Yards.	Tons.
Ashes.....	421,560	171,785
Offal.....	75,390	44,480

Final Disposition of All Material in Loads and Tons (2,000 Pounds). Collected by the Sanitary Service, January 1, 1928, to December 31, 1928.

CLASS OF REFUSE.	COLEMAN DISPOSAL COMPANY.		COLLECTED AND DISPOSED OF BY CONTRACTORS.		Total Loads.	Total Tons.
	Loads.	Tons.	Loads.	Tons.		
House dirt and ashes.....	116,460	268,406	58,806	171,785	175,266	440,271
Offal.....	32,605	81,521	7,015	27,686	39,620	109,207
Waste and rubbish.....	5,317	5,284	.....	.....	5,317	5,284
Totals.....	154,382	355,291	65,821	199,471	220,203	554,762

Cost of Collections and Disposal of Refuse by Contract in the City of Boston for the Year 1927.

Contract Districts and Population.	CHARACTER OF REFUSE.	Tons. (2,000 lbs.)	Total Tons.	Cost per Ton by Districts; Collection and Disposal.	COST PER DISTRICTS.			Where Disposed of.
					Cost.	Total Cost.	Total Cost per Capita.	
2. (67,520).....	(Mixed refuse, principally ashes (no kitchen wastes).....	35,159	.....	\$1.1623	\$40,865 59	.....	.....	Inland dumps.
	(Garbage, principally kitchen wastes.....	2,791	.....	4.7296	13,200 33	.....	.....	*
			37,950	Av. \$1.4246		\$54,065 92	\$0.8005	
4. (49,555).....	(Mixed refuse, principally ashes (no kitchen wastes).....	24,091	.....	\$2.5590	\$61,648 31	.....	.....	Inland dumps.
	(Garbage, principally kitchen wastes.....	13,508	.....	2.4621	33,258 31	.....	.....	*
			37,599	Av. \$2.5242		94,906 62	1.9155	
5. (34,390).....	(Mixed refuse, principally ashes (no kitchen wastes).....	20,909	.....	\$1.6572	\$34,651 79	.....	.....	Inland dumps.
	(Garbage, principally kitchen wastes.....	9,652	.....	2.1738	20,981 99	.....	.....	*
			30,561	Av. \$1.8204		55,633 78	1.6116	
6. (161,216).....	(Mixed refuse, principally ashes (no kitchen wastes).....	82,380	.....	\$1.8697	\$154,035 44	.....	.....	
	(Garbage, principally kitchen wastes.....	16,794	.....	7.0309	118,077 03	.....	.....	
			99,174	Av. \$2.7438		272,112 47	1.6571	Coleman Disposal Co. †
11. Hyde Park (20,364).....	(Mixed refuse, principally ashes (no kitchen wastes).....	9,246	.....	\$1.7131	\$15,839 95	.....	.....	Inland Dumps.
	(Garbage, principally kitchen wastes.....	1,735	.....	3.2932	5,713 91	.....	.....	*
			10,981	Av. \$1.9619		21,553 86	.....	
336,048	Totals.....	.....	216,265	.....	.....	\$498,272 65	\$1.5538	

* Removed beyond city limits and presumably fed to swine.

† Contract for disposal.

Total as above..... \$498,272 65
Add total of day labor table (between pages 112 and 113)..... 1,588,843 62
Net amount of appropriation..... \$2,087,116 27

Cost of Collection and Disposal of Refuse by Day Labor Force in the City of Boston for the Year Ending December 31, 1928.

Districts and Population.	CHARACTER OF REFUSE.	COST PER TON BY DISTRICTS.					COST OF DISTRICTS.						WHERE DISPOSED OF.
		Tons (2,000 lbs.)	Total Tons.	To Collect.	For Disposal.	Total Collection and Disposal.	To Collect.	Total Cost to Collect.	For Disposal.	Total Cost of Disposal.	Total Cost of Collection and Disposal.	Total Cost per Capital Collection and Disposal.	
1 (73,913)	Mixed refuse, principally ashes (no kitchen wastes) ..	37,511	.....	\$2 4737	\$0 0363	\$2 5100	\$92,796 29	.....	\$1,365 00	.....	.....	.....	Coleman Disposal Company.
	Garbage, principally kitchen wastes.....	4,774	.....	9 8683	.....	9 8683	47,111 31	.....	.....	.....	.....	.....	Coleman Disposal Company.
	Store refuse, principally paper.....	48	.....	4 6875	.....	4 6875	225 00	.....	.....	.....	.....	.....	Coleman Disposal Company.
3 (38,961)			42,333	Av. \$3 3102	Av. \$0 0363	Av. \$3 3465		\$140,132 60		\$1,365 00	\$141,497 60	\$1 9141	
	Mixed refuse, principally ashes (no kitchen wastes) ..	20,386	.....	\$2 8341	.....	\$2 8341	\$57,777 63	.....	.....	.....	.....	.....	Coleman Disposal Company.
	Garbage, principally kitchen wastes.....	4,387	.....	4 6114	.....	4 6114	20,230 23	.....	.....	.....	.....	.....	Coleman Disposal Company.
(part) and 7 (158,012)			24,773	Av. \$3 1488	Av. \$3 1488			78,007 86		.....	78,007 86	2 0022	
	Mixed refuse, principally ashes (no kitchen wastes) ..	87,677	.....	\$2 7185	.....	\$2 7185	\$238,351 90	.....	.....	.....	.....	.....	Coleman Disposal Company.
	Garbage, principally kitchen wastes.....	35,885	.....	3 7977	.....	3 7977	136,188 09	.....	.....	.....	.....	.....	Coleman Disposal Company.
8 and 9 (119,430)	Store refuse, principally paper.....	858	.....	20 5277	.....	20 5277	17,612 80	.....	.....	.....	.....	.....	Coleman Disposal Company.
			124,420	Av. \$3 1519	Av. \$3 1519			392,147 79		.....	392,147 79	2 4817	
	Mixed refuse, principally ashes (no kitchen wastes) ..	74,220	.....	\$3 5788	\$0 0548	\$3 6336	\$265,621 94	.....	\$4,072 50	.....	.....	.....	Coleman Disposal Company.
10 (75,000)	Garbage, principally kitchen wastes.....	14,342	.....	7 9978	0 1856	8 1834	114,705 32	.....	2,662 50	.....	.....	.....	Coleman Disposal Company.
	Store refuse, principally paper.....	3,055	.....	12 5269	.....	12 5269	38,269 80	.....	.....	.....	.....	.....	Coleman Disposal Company.
			91,617	Av. \$4 5689	Av. \$0 0735	Av. \$4 6424		418,597 06		6,735 00	425,332 06	5 6630	
10 (75,000)	Mixed refuse, principally ashes (no kitchen wastes) ..	48,692	.....	\$3 0653	\$0 0564	\$3 1217	\$149,256 57	.....	\$2,746 29	.....	.....	.....	Coleman Disposal Company.
	Garbage, principally kitchen wastes.....	5,339	.....	7 2218	0 5891	7 8209	38,610 55	.....	3,145 00	.....	.....	.....	Coleman Disposal Company.
	Store refuse, principally paper.....	1,323	.....	10 5562	.....	10 5562	13,009 90	.....	.....	.....	.....	.....	Coleman Disposal Company.
*			56,354	Av. \$3 6306	Av. \$0 1104	Av. \$3 7370		\$200,967 02		5,891 29	206,858 31	2 7290	
	Coleman Disposal Company									345,000 00	345,000 00		
466,116	Totals		338,497	Av. \$2 6332	Av. \$1 0605	Av. \$4 625		\$1,229,532 33		\$358,991 29	\$1,588,543 62	\$3 3432	

* The amount paid to Coleman Disposal Company is for disposal of all refuse collected by the city force and Dorchester contracts.
District 6 on page 112. Total as above..... \$1,588,843 62
Add total of contract table, page 112..... 498,273 65
Net amount of appropriation..... \$2,087,116 27

Coleman Disposal Company's contract calls for \$345,000 per year.

Details of Collected Refuse in Boston for the Year Ending December 31, 1928

Districts.	Popula- tion.	Class of Labor.	ASHES.													GARBAGE.													WASTE AND RUBBISH.													COMBINED TOTALS OF ASHES, GARBAGE WASTE AND RUBBISH.											
			CARTS.						TOTAL Cubic Yards.	COMBINED TOTALS.		AVERAGE WEIGHT PER CUBIC YARD.		TOTAL WEIGHTS.			GRAND TOTALS.	CARTS.			TOTALS.	COMBINED TOTALS.		AVERAGE WEIGHT PER CUBIC YARD.	TOTAL WEIGHTS.			GRAND TOTALS.	CARTS.			WAGONS.			COMBINED TOTALS.																		
			NUMBER OF LOADS.			AVERAGE CAPACITY.								CITY.	HIRES.	CON- TRACT.		NUMBER OF LOADS.							AVERAGE CAPACITY.				CITY.	CONTRACT.	HIRES.	NUMBER OF LOADS.					AVERAGE CAPACITY.			CITY.	CONTRACT.			HIRES.									
			Single.	Double.	Auto.	SINGLE.	DOUBLE.	AUTO.										Single.	Double.	Auto.					Single.	Double.	Auto.					CITY.	CONTRACT.	HIRES.			Single.	Double.	Auto.						CITY.	CONTRACT.	HIRES.	Single.	Double.	Auto.	CITY.	CONTRACT.	HIRES.
South Boston	73,013	City	5,427	...	5,608	2 5	...	14	92,051	11,533	92,064	315	4,075	37,511	...	37,511	2,948	...	1,008	2	...	2	8,092	4,045	8,092	1,160	.60	4,774	...	4,774	...	1,900	7	...	44	2,300	1.1	48	44	48	15,133	42,335											
East Boston	67,529	Contract	...	5,466	5,900	...	5	10	86,280	11,366	86,280	...	...	35,109	35,109	...	7	470	...	3 5	...	...	4,739	477	4,730	...	...	2,791	...	2,791	...	...	...	...	...	...	...	11,833	97,920														
Charlestown	38,961	City Hired	5,311	...	2,525	2 5 2 5	...	14	60,027	7,536	60,027	...	...	20,366	20,366	...	8	539	2	...	14	7,436	535	7,436	...	...	4,387	...	4,381	...	...	...	...	...	...	...	...	8,474	24,370														
Brighton	49,655	Contract	...	...	5,912	...	...	10	60,120	5,912	60,120	...	...	24,091	24,091	...	2,727	1,315	...	3 5	10	22,895	4,012	22,895	...	...	13,605	...	13,608	...	...	...	...	...	...	...	...	9,974	27,800														
West Roxbury	61,709	Contract City	...	784	5,131 5,379	...	5	10	51,210 55,708	8,187	87,038	...	...	14,569	20,960	35,668	...	131	1,636 1,464	2	3 5	10	16,360 20,542	3,113	30,902	...	12,120	9,553	...	21,772	...	...	64	...	70	64	70	11,354	57,310														
Dorchester	164,210	Contract	...	37,944	6,394	...	5	10	202,160	34,138	202,160	...	...	62,100	82,280	...	4,027	1,237	2	3 5	10	28,465	5,054	28,465	...	...	16,704	...	16,704	...	...	...	...	...	...	...	...	39,992	99,174														
Roxbury	120,603	City	14,197	5,270	6,397	2 5	5	14	179,430	27,879	179,430	...	...	73,118	73,118	...	3,712	911	2,119	2	3 5	14	40,270	5,742	40,279	...	23,765	...	23,765	475	...	303	434	...	455	880	785	25,501	97,671														
South End and Back Bay	119,430	City	25,842	...	6,396	2 5	...	14	182,151	34,237	182,155	...	...	74,220	74,220	...	8,560	...	455	2	3 5	14	24,308	9,624	24,308	...	14,342	...	14,342	1,221	...	555	1,897	...	2,390	3,116	3,055	46,776	11,017														
North and West Ends	75,800	City Hired	15,405 13,450	...	3,332	2 5 2 5	...	14 10	55,160 34,130	32,328	119,490	...	...	34,703	13,980	48,682	...	4,490 114	2 2	...	...	...	5,820 228	4,524	9,048	...	5,204	...	...	135	5,339	...	...	1,335 66	...	1,250 73	1,202	1,323	25,064	63,354													
Hyde Park	20,304	Contract	...	...	2,269	...	5	10	22,690	2,269	22,690	...	...	...	9,246	9,246	...	840	...	3 5	...	...	2,940	840	2,840	...	...	1,735	...	1,735	...	...	...	...	...	...	...	...	5,109	10,941													
Totals	802,164	...	79,532	39,601	60,183	...	...	...	1,660,421	175,266	1,680,421	...	...	264,467	13,980	171,785	440,271	20,161	0,125	10,334	...	...	185,095	39,620	185,095	...	64,692	44,480	135	166,207	1,694	...	1,148	3,631	...	4,096	5,317	5,264	220,303	554,792													

CITY OF BOSTON SANITARY DISTRICTS 1928

3. CHARLESTOWN

POP. 38961
(43.00)

1271 lbs.
\$2.00

1124 lbs.
\$0.80

2. E. BOSTON

POP. 67529
(43.00)

10. N. & W. ENDS

POP. 75800 1461 lbs.
(111.00) \$2.72

4. BRIGHTON

POP. 49555
(17.00)

1594 lbs.
\$1.91

8.9. So. END & B. BAY

POP. 119430
(58.00)

1534 lbs. \$3.56

1. So. BOSTON

POP. 73913
(51.00)

1145 lbs.
\$1.91

7. ROXBURY

POP. 130603 (63.00)

1495 lbs.
\$2.84

POP. 27409 (17.00)

1951 lbs.
\$1.03

POP. 158012 (43.00)
1625 lbs. \$2.48

6. DORCHESTER

POP. 164210
(31.00)

1208 lbs.
\$1.65

5. WEST ROXBURY

POP. 34390
(5.00)

1777 lbs.
\$1.61

HYDE PARK

POP. 20364 (7.00)

1076 lbs.
\$1.05

FIGURES SHOW ESTIMATED
MEAN 1928 POPULATION AND
POP. PER ACRE: ALSO, TOTAL
WEIGHT OF REFUSE AND COST
PER CAPITA FOR THE YEAR.

10000 FT.

SANITARY DIVISION — STREET CLEANING SERVICE.

General administration:

Salary, division engineer (in part)	\$1,787 49	
Salary, deputy supervisor	3,509 59	
Pensions, retired veterans	2,134 50	
Pensions, retired laborers	6,290 00	
Annuity, Acts of 1920 — chapter 132	600 00	
Salary, medical inspector	900 00	
Salary, chief veterinarian	1,000 00	
Injured employees	3,420 99	
Telephone	632 73	
Printing and stationery	1,310 92	
Advertising	10 00	
Miscellaneous	34 10	
Salary — chauffeur — division engineer	597 45	
Auto repairs and maintenance,	1,390 95	
		\$23,618 72

General expense other than general administration:

Wages, stablemen	\$51,400 95	
Wages, yardmen	11,730 60	
Wages, watchmen	9,862 50	
Wages, clerk	6,475 22	
Wages, telephone operator	1,386 11	
Hay, grain and straw	31,313 30	
Light	842 72	
Veterinary service and medicine	338 65	
Horseshoeing	2,872 80	
Harnesses, etc.	107 42	
Fuel	747 66	
Stable and yards, rent of	150 00	
Stable and yards, supplies	546 23	
Stable and yards, building repairs	769 02	
Auto repairs and maintenance,	4,392 16	
		122,935 34

Operating expenses:

Salaries, district foremen	\$21,109 92	
Salaries, inspectors	48,531 49	
Wages, laborers	535,791 20	
<i>Carried forward</i>	\$605,432 61	\$146,554 06

<i>Brought forward</i>	\$605,432 61	\$146,554 06
Holidays	20,656 98	
Vacation	20,893 88	
Shops, labor for repairs	10,393 88	
Dumps, use of	1,429 59	
Snow license	500 00	
Cart repairs	9,368 07	
Tools and repairs	261 32	
Vehicle supplies	72 40	
Push carts and barrels	1,555 80	
Push brooms, teamsters' brooms, etc.	1,733 76	
Machine brooms	1,744 00	
Sand	1,051 92	
Water cart hose	297 81	
Shovels, hoes and picks, etc.	1,289 40	
Hired autos	31,971 41	
Snow plow parts, etc.	4,684 44	
Shop, stock for repairs	25,575 29	
Auto repairs and maintenance,	87,602 57	
		826,515 13
		<u>\$973,069 19</u>

STREET OILING AND WATERING BRANCH.

General administration:

Salaries, division engineer (in part)	\$198 61	
Printing and stationery	173 76	
Telephone	54 35	
Auto repairs and maintenance,	546 55	
		\$973 27

General expenses other than general administration:

Wages of stablemen	\$282 50	
Hay and grain	154 25	
Horseshoeing	82 00	
Shop, stock for repairs	214 99	
Miscellaneous	209 40	
Auto repairs and maintenance	337 52	
		1,280 66

Operating expenses:

Road oil	\$13,301 73	
Sand	6,405 44	
Calside	852 99	
Tools	59 03	
Sand spreader	638 05	
Miscellaneous	28 24	
		21,285 48

Carried forward \$23,539 41

<i>Brought forward</i>	.	.	.	.	.	.	\$23,539 41
Inspection:							
General foremen	.	.	.	.	.	\$2,110 22	
Oil	.	.	.	.	.	1,788 90	
Water	.	.	.	.	.	145 47	
Calside	.	.	.	.	.	158 33	
Sanding	.	.	.	.	.	147 31	
Standpipe	.	.	.	.	.	14 16	
Building repairs	.	.	.	.	.	398 22	
Showers	.	.	.	.	.	10 96	
Holiday	.	.	.	.	.	149 32	
Vacation	.	.	.	.	.	205 85	
							5,128 74
Labor:							
Oil	.	.	.	.	.	\$3,496 48	
Water	.	.	.	.	.	298 00	
Standpipe	.	.	.	.	.	100 00	
Sanding	.	.	.	.	.	6,974 82	
Calside	.	.	.	.	.	597 50	
Holiday	.	.	.	.	.	624 50	
Vacation	.	.	.	.	.	296 10	
Showers	.	.	.	.	.	239 44	
Building repairs	.	.	.	.	.	405 50	
							13,032 34
							\$41,700 49
Street cleaning expenditures	.					\$973,069 19	
Street watering and oiling ex-							
penditures	.	.	.	.	.	41,700 49	
							\$1,014,769 68

DISTRIBUTION OF EXPENDITURES.

Removing snow	\$182,427 74	
Flushing streets	\$51,506 44	\$182,427 74
Street patrolling	42,874 81	
Push cart patrolling	182,193 55	
Refuse box collections	28,357 89	
Cleaning of paved streets	297,732 63	
Cleaning of macadam streets	106,734 44	
Cleaning of streets by motor machines	63,581 69	
Public alleys	4,832 44	
Sanding of slippery streets	12,827 56	
		790,641 45
Total		\$973,069 19
Oiling of public streets and ways		38,029 60
Watering of public streets and ways		3,670 89
Total		<u>\$1,014,769 68</u>

Summary.

ITEMS.	STREET CLEANING BRANCH.			STREET WATERING AND OILING BRANCH.		
	1926.	1927.	1928.	1926.	1927.	1928.
Labor.....	\$749,049 39	\$832,665 00	\$758,572 75	\$19,568 45	\$18,734 53	\$18,642 19
Teaming.....	62,807 10	68,072 00	31,971 41	395 00		
Supplies and repairs....	136,542 82	162,508 71	182,525 03	31,495 43	30,640 53	23,058 30
Totals.....	\$993,399 31	\$1,063,245 71	\$973,069 19	\$51,458 88	\$49,375 06	\$41,700 49

Macadam Streets Oiled — Cost of Labor, Teaming, Oil, etc., Including Supervision.

Districts.	Area Oiled Once, Square Yards.	Equivalent Mileage, 30-Foot Roadway.	DATES OF OILING.		Total Cost.	Cost per Square Yard Covered Once.	Gallons Used.	Gallons per Square Yards.
			First.	Last.				
South Boston	187,049	10.627	July	Nov. 30	\$4,445 83	\$0.237	33,779	.1805
East Boston	—	—	—	—	—	—	—	—
Charlestown	5,052	.287	July	July 12	152 42	.0301	760	.1504
Brighton	2,559	.145	Aug.	Aug. 14	95 12	.0371	838	.3278
West Roxbury	269,488	15.311	May	Nov. 16	6,939 79	.0257	44,943	.1667
Dorchester	357,873	20.333	May	Dec. 5	8,655 31	.0240	54,568	.1524
Roxbury	330,041	18.803	May	Oct. 19	8,045 59	.0243	44,576	.1346
South End	71,519	4.063	June	Aug. 22	2,612 83	.0365	11,430	.1598
Hyde Park	231,034	13.126	Aug.	Dec. 3	7,082 71	.0305	44,483	.1925
Totals	14,555 25	82.7	.....	.....	\$38,029 60	.....	235,377	.....
Average .....	.....	.....	.....	.....	.....	\$0.261	.....	.1617

Cleaning of Paved Streets and Macadam Gutters, 1928.

DISTRICT.	PAVED STREETS.		MACADAM GUTTERS.		TOTAL PAVED STREETS AND MACADAM GUTTERS.	PAVED STREETS AND MACADAM GUTTERS.				LOADS OF DIRT REMOVED.						CUBIC YARDS OF DIRT REMOVED.									
	PAVED STREETS.		MACADAM GUTTERS.			PAVED STREETS AND MACADAM GUTTERS.				PAVED STREETS.		MACADAM GUTTERS.		PAVED STREETS AND MACADAM GUTTERS.		PAVED STREETS.			MACADAM GUTTERS.			PAVED STREETS AND MACADAM GUTTERS.			
	Square Yards Cleaned Once.	Equivalent Mileage 30-foot Roadway Cleaned Once.	Square Yards Cleaned Once.	Linear Miles Cleaned Once.		Cleaned Once.	Inspection, Labor.	All Other Charges.	Total Cost.	Cost per Thousand Square Yards Cleaned Once.	Loads.	Cost per Load.	Loads.	Cost per Load.	Loads.	Cost per Load.	Total Cubic Yards.	Per Thousand Square Yards.	Cost per Cubic Yard Removed.	Total Cubic Yards.	Per Thousand Square Yards.	Cost per Cubic Yard Removed.	Total Cubic Yards.	Per Thousand Square Yards.	Cost per Cubic Yard Removed.
South Boston.....	13,472,738	765.49	1,875,947	355.29	15,348,685	\$32,817 99	\$8,912 15	\$41,729 94	\$2.718	4,201	\$6.830	1,244	\$9.953	5,535	\$7.530	8,582	.6390	\$3.419	2,488	1.326	\$4.976	11,070	.721	\$3.769	
East Boston.....	8,277,419	470.30	3,978,427	763.49	12,255,846	32,149 77	5,264 44	37,414 21	3.052	2,743	5.888	3,440	6.18	6,183	6.051	5,486	.6627	2.042	6,880	1.729	3.09	12,366	1.000	3.025	
Charlestown.....	11,974,820	680.33	2,710,874	513.42	14,685,694	21,368 22	4,361 35	25,719 57	1.751	1,968	8.555	770	11.535	2,738	9.393	3,936	.3267	4.277	1,540	.568	6.767	5,478	.372	4.696	
Dorchester.....	10,178,167	578.30	4,672,114	884.86	14,850,271	36,500 49	8,661 85	43,662 34	2.941	3,430	5.060	3,801	6.912	7,231	6.038	6,860	.6730	2.534	7,602	1.627	3.456	14,462	.973	3.005	
Roxbury.....	7,570,695	430.16	1,467,893	281.79	9,038,588	17,066 82	4,803 54	21,560 36	2.424	2,720	5.151	1,410	5.637	4,130	5.317	5,440	.718	2.575	2,820	1.89	2.819	8,260	.911	2.868	
Uptown and Back Bay.....	36,495,710	2,073.61	5,372,819	1,017.67	41,868,529	44,759 93	12,199 81	56,960 74	1.36	2,676	10.08	2,960	10.134	5,635	10.108	5,352	.1466	5.04	5,915	1.101	5.067	11,270	.260	5.054	
Downtown.....	80,880,545	4,595.48			80,880,545	49,165 86	16,918 18	66,084 04	.817	5,705	11.583			5,705	11.583	11,410	.1410	5.791				11,410	.1410	5.791	
North and West Ends.....	97,670,814	5,543.79			95,670,814	88,887 50	22,049 37	110,936 87	1.136	12,418	8.933			12,418	8.933	24,836	.2545	4.460				24,836	.2545	4.460	
Totals.....	266,421,008	16,137.46	20,098,074	3,806.42	284,519,172	\$323,006 38	\$81,480 69	\$404,467 07	\$1.421	35,951		13,624		49,576		71,002			27,248			99,160			
Average.....											\$8.281			\$7.634		\$8.158		.269	\$4.14		1.366	\$3.917		.348	\$4.679

APPENDIX E.

REPORT OF THE DIVISION ENGINEER OF THE
SEWER DIVISION JANUARY 1, 1929.

MR. JAMES H. SULLIVAN,
Commissioner of Public Works.

DEAR SIR,—I submit herewith statement of the activities and expenditures of the Sewer Division for the year ending December 31, 1928.

During the fiscal year 1928, there were built by contractors, day labor and private parties, 21.55 miles of sewers and surface drains throughout the city. There were 1.34 miles of sewers and surface drains rebuilt or abandoned, making a net increase for 1928 of 20.21 miles. This, added to the existing 1,028.59 miles of common sewers and surface drains, together with the 30.93 miles of intercepting sewers, makes a grand total of 1,079.73 miles of common and intercepting sewers belonging to the City of Boston and under the care of the Sewer Division on January 1, 1929.

In addition to the sewers belonging to the City of Boston, there are also State or Metropolitan sewers, located within the city limits, as follows:

North Metropolitan Sewer.—1.653 miles in Deer Island; 5.467 miles in East Boston and 3.292 miles in Charlestown — a total of 10.412 miles of sewer belonging to the State and discharging into the harbor at Deer Island.

South Metropolitan Sewer.—There are 1.50 miles in the Back Bay; 6.01 miles in Brighton; 2.87 miles in Dorchester; 4.527 miles in Hyde Park; 1.430 miles in Roxbury and 7.643 miles in West Roxbury — a total of 23.98 miles of sewer discharging into the harbor at Nut Island, all of which are under the control of the Metropolitan District Commission. All the city sewers in East Boston and Charlestown drain into the North Metropolitan System and all of Brighton and portions of the Back Bay, Dorchester and Hyde Park, Roxbury and West Roxbury drain into the South Metropolitan System.

Six hundred seventy-eight catch-basins were built or rebuilt during the year, making a total of 18,540 catch-basins under the care of the Sewer Division on January 1, 1929, and 8,199 catch-basins and 139 drop inlets were cleaned by contract; the total amount of material removed therefrom being 29,669.57 cubic yards.

Three thousand two hundred thirty-four permits have been issued as follows: 701 to district foremen and contractors for new construction work and 2,533 permits were issued to drain layers for laying new house drains or repairing old ones.

Entrance fees amounting to \$12,231.45 have been deposited with the City Collector for collections from estates upon which no sewer assessment was ever paid, in accordance with the City Ordinances of 1910, chapter 9, section 10.

One thousand four hundred seventy-eight complaints on flooding and other causes have been investigated, and written reports made thereon, and gasolene and sand traps in 524 garages have been inspected, and notices mailed to owners where defects were found.

Plans for the assessment of estates for sewer construction have been furnished to the Board of Street Commissioners, representing 31,666.85 linear feet of sewers and appurtenances, costing \$208,379.56.

Three thousand nine hundred nineteen municipal liens have been reported to the City Collector, in accordance with chapter 60, section 23, of the General Laws, and in addition there were 6,500 reported orally upon persons making verbal requests at the Sewer Division office.

Eight hundred seventy notices have been mailed to abutters in conformity with section 8, chapter 9, of the Ordinances of 1910, notifying them of new sewer construction.

The principal sewerage works built, together with those recommended for the coming year, are as follows:

CITY PROPER.

Old defective sewers have been rebuilt in Clark street, Alleys 824 and 825 off Camden street, Randolph street, St. Paul street, and Belvidere street. During the coming year, there will be required extensive sewers and drains in Causeway street and Nashua street on account of the widening and reconstruction of these streets.

ROXBURY.

Pipe sewers and surface drains were built in the Riverway, from Deaconess road to Berners street, and about 100 feet of 6-foot conduit in Hampden street to replace the portion of this sewer, which collapsed. Further work on the rebuilding of this Hampden street sewer should be continued this year as far as Farnham street. The 10-foot by 12-foot concrete overflow for the Dorchester brook extension, north of Massachusetts avenue, together with the existing sewer in Fellows street and Codman park, should be rebuilt this year.

SOUTH BOSTON.

A new sewer, with tidegate chamber and overflow, was built in D street, between West First street and Claflin street, to drain portions of Commonwealth land.

EAST BOSTON.

Work on the construction of the Porter street outlet was continued throughout the year, and approximately 3,000 linear feet of 12-foot by 10-foot reinforced concrete structure completed. This work was authorized by the Massachusetts Legislature, under chapter 259 of the Acts of 1926, and was the principal work done in this district.

Studies are being made for a pumping station to pump the flow delivered by this conduit in times of heavy storm.

CHARLESTOWN.

The principal sewerage works built were those made necessary on account of street changes at Sullivan Square, and a new surface drain in Alford street to more adequately take care of the surface drainage of this street.

BRIGHTON.

In response to petitions, sewers have been built in Western avenue, Chiswick Road West, Beechcroft street, Langley road, Colonial road, Perthshire road, Alberta road and Cambridge street. New street construction required sewerage works in Gerald road, Lane park, Brooksdale road, Riverview road, Adamson street, Hunnewell street, Commonwealth avenue and Gillard road. Sewerage works recommended are the Shepard

brook conduit in Everett street, between Adams street and Hichborn street, "393" street construction in Leamington road, Hano street, Griggs street and Brayton road. Extensive building operations require new sewers in Mt. Vernon street, Matchett street, Brock street and approximately ten other streets.

WEST ROXBURY.

On petitions from the abutters, sewerage works were built in Barlow street, West Roxbury Parkway, Grove street, Walk Hill street, Caspar street, Addington road, Potomac street, Liszt street, Acadia road, Centre street, Whipple avenue, Corey street, Dudley avenue, Clarendon avenue, Thurlow street, Sanborn avenue, Selwyn street, in streets for the Arboretum Heights Development (3,600 linear feet sewerage works), and in streets in the Woodland Hill section (7,300 linear feet sewerage works).

Street construction under chapter 393 of the Acts of 1906 required sewerage works built in Doncaster street, Woodbrier road, Willow street, Willowdean avenue, Parklawn street, Realton road, Burwell road, Wyvern street, Leniston road and Gardner street.

Outlets for "393" streets and sewerage works in advance of permanent pavement were built in Union avenue, Dunbar street Weld street, Church street and Florence street.

Sewerage works required on account of the reconstruction of Ashland street, were completed during the year.

Sewerage works required on account of seventy petitions from the abutters and in several streets recently laid out and ordered constructed under chapter "393", Acts of 1906, are recommended to be built.

The extension of the main line Stony brook conduit, its Roslindale branch, between Bradeen street and Firth road, the Dent street brook conduit, between La Grange street and Vermont street, and the Spring street brook conduit in the vicinity of Prospect street and Baker street, are four important projects designed to drain surface water from large areas and should be built during the year 1929. An outlet will be required for the sanitary sewers for the Weld Park district in the vicinity of Church street, Weld street and Brookline town line. Further extension of the Germantown

sewerage system and the necessary work to improve the drainage conditions in the vicinity of Robin and La Grange streets are recommended.

DORCHESTER.

The sewerage works required in connection with the reconstruction of Oakland street, and the replacing of the open channel of Davenport brook with a double concrete conduit for 800 feet westerly of Hallet street were large and important works. On petitions from the abutters, pipe sewers were built in Southern Artery, near Emerson avenue, Emerson avenue, Westmoreland street extension, Carlotta street, Claymont terrace, Milton street, Dyer avenue, Allendale avenue, Lenoxdale avenue, Oldfield street, Southview street, Dorchester avenue, between Harbor View street and Taft street, Nevada street, Olney street, Southern Artery, between Magdala street and Becket street, Columbia road from Bodwell street 75 feet northeast, St. Gregory's street, Wentworth terrace, Woodfield street, Branton street, Southern Artery, from Branton street 80 feet westerly; Pasadena road Extension, Marsh street, Southern Artery, from Grayson street to Cushing Hill road, and Humes road, and by private parties under release in Laban Pratt street, Arbroth street and Hildreth street. On account of streets being laid out and ordered constructed under chapter "393" of the Acts of 1906, sewerage works were built in Oakton street, Walk Hill street, between Wellington Hill Footway and Harvard street, Greenfield road, Rockdale street, Wilmington avenue, Ogden street, Tonawanda street, Greendale road, Becket street, Hollingsworth street, Ceylon street and Bateswell road.

A number of petitions for sewerage works is on file, some of them for sewers in large areas under development by real estate promoters, where sewerage works are recommended as the house construction progresses. Oakland brook in Favre street, Richmond road and outlet in private land, between Bismarck street and Richmond road; Davenport brook, from Washington street southwesterly to Morton street, and Freeport street brook, extended to the New York, New Haven & Hartford Railroad, are large conduits required for surface water drainage.

A study is being made with a view of abandoning

the present Dorchester intercepting sewer overflow at Mt. Vernon street, which needs rebuilding, and constructing two or more overflows at points where they will have more direct flow into the main channel of Dorchester bay.

HYDE PARK.

The street reconstruction in River street required sewerage works and outlets in private land, Arlington street, Pierce street and Blake street. On petition of the abutters, sewers were built in Summit street, Metropolitan avenue between Highland street and Summit street, Clifford street, Belnel road, Rutledge road and Dana avenue.

Surface drains were built in Dana avenue, between Water street and Loring street, and sewerage works in Caton street and Hollingsworth street, in advance of Chapter "393," Acts of 1906, street construction.

Sumner brook conduit, also structures as outlets for surface water drainage from several areas, are recommended for construction. Petitions for sewers have been received for two large street development schemes in the Sally's Rock district, and from other streets in the Hyde Park district.

CALF PASTURE PUMPING STATION.

New cages were built in the filth hoist; the pump wells in the station were cleaned out regularly, and 8,000 cubic yards were dredged from channel to dock. Four electric pumps in place of No. 3 and No. 4 engines; storage tanks for 420,000 gallons of fuel oil, sludge disposal facilities for the deposit sewers and the placing of motor operated gates on the 9-foot diameter sewers are the principal items recommended for the future.

UNION PARK STREET PUMPING STATION.

Only construction work of minor importance has been done at this station during the past year. Mechanical rakes for the screens and a new ventilator for the screen chamber are recommended.

MOON ISLAND.

Concrete posts for an additional length of 1,047 feet of fence on the causeway and a new roof placed on the

junction chamber is the principal work done at Moon Island. A new concrete floor in the gallery; new out-fall gates and floor gratings; the removal of the east shaft buildings, encasing the shaft in concrete, grading and placing riprap around it, and completing the fence on the causeway are the principal requirements at Moon Island.

Yours respectfully,

THOMAS F. BOWES,
Division Engineer.

SEWER DIVISION.

The work of the Sewer Division is carried on under chapters 27 and 39, Revised Ordinances of 1925, and the following statutes:

- Chapter 426, 1897, as amended by 450, 1899, and 268, 1903.
- Chapter 283, 1903, as amended by 464, 1907.
- Chapter 550, 1907.
- Chapter 424, 1908.
- Chapter 514, 1908.
- Chapter 74, Special Acts of 1918.

THE DUTIES OF THE SEWER DIVISION.

- 1. Preparation of plans for sewerage works.
- 2. Construction and maintenance of all sewerage works.
- 3. Investigation of complaints in regard to defective drainage.
- 4. The granting of permits for sewer construction.
- 5. The preparation of plans for the assessment of the cost of sewer construction.
- 6. The examination of the plans of other corporations proposing to construct works in the public streets with reference to their probable interference with sewerage works.

Total number of permanent employees on pay roll December 31, 1927	317
Total number of permanent employees on pay roll December 31, 1928	336
Total amount of weekly pay roll for the week ending December 31, 1927	\$12,798.20
Total amount of weekly pay roll for week ending December 31, 1928	\$12,895.33
Total amount of monthly pay roll December 31, 1927	\$100.00
Total amount of monthly pay roll December 31, 1928	\$100.00
* Total amount of monthly pension roll December 31, 1927:	
Veterans	\$92.54
Laborers	\$150.00

* Chapter 32, General Laws (veterans), chapter 413, Acts of 1911, and amendments thereto (laborers).

Total amount of monthly pension roll December 31, 1928:

Veterans \$127.00

Laborers \$54.00

Average weekly pay roll including monthly roll and exclusive of pension roll for fiscal year charged as follows:

Maintenance \$8,691.63

Construction \$4,692.64

Average number of permanent men employed 336

Number of men on pension roll December 31, 1927:

Veterans 2

Laborers 5

Number of men on pension roll December 31, 1928:

Veterans 2

Laborers 2

Rate of wages paid to common laborers \$5.00

Financial Statement from January 1, 1928, to December 31, 1928.

OBJECT.	Balance on Hand Jan. 1, 1928.	Appropriations, Loans and Revenue.	Transfers to	Transfers from	Total Credits.	Expenditures during the Year 1928.	Balance on Hand Dec. 31, 1928.
Sewer Division .....	.....	\$717,607 39	.....	* \$28,884 85	\$688,722 54	\$688,722 54	
Sewerage Works	\$369,033 77	1,001,052 36	.....	.....	1,370,086 13	1,131,797 36	\$238,288 77
Sewerage Works, Charles River Basin	516 70	.....	.....	† 516 70	.....	.....	
East Boston Pumping Station and Outlet	711,119 81	.....	.....	.....	711,119 81	190,428 20	520,691 61
Totals	\$1,080,670 28	\$1,718,659 75	.....	\$29,401 55	\$2,769,928 48	\$2,010,948 10	\$758,980 38

* To Reconstructing and repairing streets by contract.

To Public Welfare Department, Central Office.

† To Reconstructing and repairing streets by contract.

\$6,500 00

22,384 85

\$516 70

MAINTENANCE EXPENDITURES JANUARY 1, 1928, TO DECEMBER 31, 1928.

SEWER DIVISION.

Improved Sewerage.

Pumping Station, Calf Pasture, inside	\$130,565	25	
Pumping Station, Calf Pasture, outside	35,303	11	
Pumping Station, Calf Pasture, engines	43,557	63	
Pumping Station, Calf Pasture, boilers	22,138	16	
Pumping Station, Union Park street	8,628	73	
Pumping Station, Summer street	2,138	82	
Pumping Station, Hyde Park	1,571	60	
			\$243,903 30
Moon Island			28,503 89
Main and intersecting sewers			17,242 30
			\$289,649 49

Miscellaneous Charges.

Maintenance, Stony brook			\$4,058 77
Cleaning catch-basins			92,610 62
Yards and lockers			464 11
Employed at yards			46,079 90
Automobiles	\$51,146	44	
Horses, carts, harnesses, etc.	399	22	
Teaming	7,876	26	
			\$59,421 92

Less amount earned by service teams and auto trucks	21,446	00	
			37,975 92
Cleaning, sewers			58,483 91
Office salaries			48,941 21
Office expense			2,838 69
Repairing department buildings	\$819	66	
Repairing catch-basins, South Boston	3,264	60	
Repairing catch-basins, East Boston	1,827	92	
Repairing catch-basins, Charlestown	1,264	95	
Repairing catch-basins, Brighton	1,536	06	
Repairing catch-basins, West Roxbury	4,039	92	
Repairing catch-basins, Dorchester	5,284	54	
Repairing catch-basins, Hyde Park	1,069	82	
Repairing catch-basins, Roxbury	5,720	45	
Repairing catch-basins, city proper	6,257	13	
Repairing sewers, South Boston	2,400	19	
Repairing sewers, East Boston	1,133	26	
Repairing sewers, Charlestown	532	76	
Repairing sewers, Brighton	1,449	53	
Repairing sewers, West Roxbury	2,615	37	
Repairing sewers, Dorchester	4,071	07	
Repairing sewers, Hyde Park	1,269	78	
Repairing sewers, Roxbury	4,005	40	
Repairing sewers, city proper	5,992	91	
			54,555 32

Carried forward \$635,657 94

<i>Brought forward</i>	\$635,657 94
Pension roll (veterans)	1,526 00
Pension roll (laborers)	1,210 00
Annuities	351 00
Fuel and oil	2,797 70
Hardware, tools, etc.	5,580 95
Engines and boilers	93 84
Sundries and miscellaneous charges	19,456 06
Telephones	658 75
House connections	18,267 60
Rubber goods	895 97
Gatehouses, Fenway	4,267 92
Stock	11,367 46
	\$702,131 19

Credit.

Stock transferred and used in construction	13,408 65
	\$688,722 54

Charges to Various Parties for Work Done and Materials Furnished, etc.

W. M. McDonald	\$15 00
D. B. Chaletzky	15 00
William Perry Company	20 00
Metropolitan District Commission	11,998 37
Jacob Donbar	14 38
J. P. Mackin	14 38
H. G. Fisher	11 75
Stutz Motor Company	15 00
American Railway Express Company	9 25
H. N. Smith	* 43 84
W. H. Hardy	* 37 84
M. W. Palmer	* 55 56
Hurley-Driscoll Company	* 101 65
Frank Weiss	11 75
Michael McDonough	5 88
Fred A. Mack	50 08
William B. Merrill & Co.	10 00
John Williams	* 30 68
James Waggett	15 00
Longwood Garage	15 00
V. Barletta	15 00
Harvard Club	15 00
Edison Electric Illuminating Company	84 95
B. H. Greenhood	15 00
M. Burnett	9 00
Neighborhood House, Jamaica Plain	1 00
Slayton & Boynton	15 00
Slayton & Boynton	57 25
Frank Weiss	12 00
Coleman Garage	14 38
Howarth & Snyder	16 99
Burnett & Sherman	4 38
William Perry Company	65 00
E. A. Riley	13 38
P. H. Kelley	7 12
M. Rosen	* 15 00
<i>Carried forward</i>	\$12,850 86

* To the credit of Sewerage Works Appropriation.

<i>Brought forward</i>	\$12,850 86
C. Russo	* 102 20
Joseph Todesca	17 15
Angelo Todesca	14 00
Blone Smock Company	41 00
Humboldt Garage	15 00
Hurley-Driscoll Company	* 57 00
Fenway Garage	14 38
Bennett Rockman	227 86
F. Morton Smith	100 00
T. Dannehy & Son	19 00
D. W. Ferguson Coal Company	5 00
Goudy Company	9 25
Pierce & Nisson	15 00
Elrae Garage	15 00
Fenway Garage	15 00
John P. Willet	7 12
Dennis O'Connell	* 36 80
Home of Truth	28 75
P. DeCristofaro	* 87 50
Dennis O'Connell	* 93 70
M. DeMatteo	* 17 50
John A. Dow	15 00
William A. McPherson	* 38 72
M. DeMatteo	* 37 26
M. DeMatteo	* 10 00
Coleman Brothers	* 35 00
Emily R. Walk heirs and devisees	28 75
Homeopathic Hospital	28 75
F. Rubin	15 00
S. H. Rabinovitz	15 00
B. Welansky	15 00
S. Swartz	15 00
William Perry Company	15 00
Fenway Garage	15 00
William Perry	50 00
Annie M. Dennehy	15 00
Spinney & Kelly	15 00
A. Alonzo	7 50
Isadore Grinslin	1 00
Standard Oil Company	200 00
Patrick Doyle	10 00
Fred Davis	50 00
Uncollected	\$14,421 05
	271 61
Bills of 1927, paid in 1928	\$14,149 44
	245 58
Total amount collected	\$14,395 02
Entrance fees charged and collected in accordance with Ordinances of 1925, chapter 27, section 10	\$12,231 45

* To the credit of Sewerage Works Appropriation.

Sewer Division.—Maintenance Expenditures, Detail, 1928.

Accounts.	Total Expenditures.	Labor.	Teaming.	Stock.	Contracts.	Miscellaneous.
Automobiles (27).....	\$51,146 44	\$29,474 79	.....	.....	.....	Repairs.....\$11,075 98 Equipment.....5,662 65 Supplies.....4,866 02 Fees.....67 00 \$21,671 65
Cleaning catch-basins.....	92,610 62	42,140 60	\$3,503 50	.....	\$46,694 29	Advertising.....\$9 25 Salt.....17 23 Dumping.....155 75 182 23
Cleaning sewers.....	58,483 91	32,013 07	4,006 00	.....	22,371 34	Advertising.....\$34 75 Dumping.....58 75 93 50
Engines and boilers.....	93 84	.....	.....	.....	.....	Waste.....\$62 53 Repairs and inspection...31 31 93 84
Employed at yards.....	46,079 90	46,079 90	.....	.....	.....	Coal.....\$917 62 Gasolene and oil.....1,880 08 2,797 70
Fuel and oil.....	2,797 70	.....	.....	.....	.....	Hose.....\$652 28 Hardware, tools, etc.....4,928 67 5,580 95
Hardware and tools.....	5,580 95	.....	.....	.....	.....	Stable goods and supplies, Repairs, wagons and har- nesses.....35 05 Shoeing.....353 50 399 22
House connections.....	18,267 60	17,863 10	320 00	\$84 50	.....	Stationery and supplies...\$2,553 48 Miscellaneous.....285 21 2,838 69
Horses, carts and harnesses.....	399 22	.....	.....	.....	.....	
Maintenance, Stony brook.....	4,058 77	2,386 77	.....	.....	1,672 00	
Office expense.....	2,838 69	.....	.....	.....	.....	

Office salaries	48,941 21	48,941 21					{ 111 pairs boots. 48 pairs mitts. 96 coats 65 hats. }	895 97
Rubber goods	895 97							
Stock	11,367 46	1,618 84	264 00	9,484 62				
Tearing	7,876 26	7,876 26						
Yard and locker	464 11						Gas and electricity. Miscellaneous.	\$130 64 333 47
Telephones	658 75							464 11
Back Bay Pens, gatehouses	4,267 92	2,340 60					Electricity. Repairs, etc.	\$968 42 958 90
Sundries	19,456 06	13,830 91	768 00	305 28			Repairs, etc. Transportation. Workmen's compensa- tion.	\$1,697 39 1,063 05 1,791 43
Repairing department buildings	819 66	204 00		78 59	537 07			4,551 87
Repairing catch-basins, South Boston	3,264 60	1,272 40	372 00	1,307 55	312 65			
" " East Boston	1,827 92	548 42	843 00	288 00	148 50			
" " Charlestown	1,264 95	328 50	310 00	626 45				
" " Brighton	1,536 06	726 36		809 70				
" " West Roxbury	4,039 92	2,157 66	460 00	943 00	479 26			
" " Dorchester	5,284 54	3,721 04	420 00	1,143 50				
" " Hyde Park	1,069 82	696 22	72 00	301 60				
" " Roxbury	5,720 45	2,274 77	550 00	1,844 31	1,051 37			

Sewer Division.—Maintenance Expenditures, Detail, 1928.—Concluded.

ACCOUNTS.	Total Expendi- tures.	Labor.	Teaming.	Stock.	Contracts.	Miscellaneous.
Repairing catch-basins, City Proper.....	\$6,257 13	\$3,473 94	\$380 00	\$2,403 19		
Repairing sewers, South Boston.....	2,400 19	1,467 35	310 00	371 35	\$251 49	
" " East Boston.....	1,133 26	395 61	110 00	256 00	371 65	
" " Charlestown.....	532 76	370 16	.....	162 60		
" " Brighton.....	1,449 53	780 33	380 00	289 20		
" " West Roxbury.....	2,615 37	1,723 53	360 00	275 20	256 64	
" " Dorchester.....	4,071 07	3,378 35	110 00	529 26	53 46	
" " Hyde Park.....	1,269 78	1,178 78	.....	91 00		
" " Roxbury.....	4,005 40	2,186 38	750 00	825 60	243 42	
" " City Proper.....	5,992 91	3,231 45	540 00	511 32	1,710 14	
Annuities.....	351 00	.....	.....	.....	.....	\$351 00
Pension roll, veterans and laborers.....	2,736 00	2,736 00				
Less Credits.						
Teams.....	\$433,927 70	\$277,417 30	\$14,918 50	\$22,931 82	\$76,153 28	\$42,506 80
Stock.....	34,854 65	12,226 00	.....	13,408 65	.....	9,220 00
Totals.....	\$399,073 05	\$265,191 30	\$14,918 50	\$9,523 17	\$76,153 28	\$33,286 80

MISCELLANEOUS ACCOUNT, DETAIL.

Labor.

Vacations	\$8,300 17	
Sick leave	184 16	
Workingmen's compensation . . .	1,791 43	
Miscellaneous:		
Inspection — Complaints: Defec-		
tive drainage, prevention of		
gasolene entering common		
sewers.		
General engineering	5,346 58	
		\$15,622 34
Teaming, removing snow		768 00
Transportation		1,063 05
Repairing streets		1,673 63
Miscellaneous		329 04
		\$19,456 06

Sewer Division.—Maintenance Expenditures Detail, 1928.

ACCOUNTS.	Total Expendi- tures.	Labor.	Teaming.	Waste.	Fuel and Power.	Oil and Gasoline.	Packing.	Valves.	Trans- porta- tion.	Stable.	Pipe Fittings and Miscel- laneous.	Autos.
Pumping station, Calf Pasture:												
Inside.....	\$130,565 25	\$39,449 76	.....	\$638 10	\$77,872 35	\$181 61	\$1,100 00	.....	\$77 10	.....	\$11,246 33	
Outside.....	35,303 11	23,871 37	.....	.....	.....	.....	.....	.....	7 40	\$624 08	10,473 82	\$326 44
Engines.....	43,557 63	38,228 64	.....	.....	.....	1,676 18	1,485 00	\$1,184 34	.....	.....	983 47	
Boilers.....	22,138 16	20,703 00	.....	.....	.....	.....	.....	.....	.....	.....	1,435 16	
Moon Island.....	28,503 89	24,123 78	.....	19 24	442 50	370 81	.....	.....	200 66	.....	2,323 85	1,023 05
Main and intercepting sewers.....	17,242 30	13,846 97	\$3,020 00	.....	.....	.....	.....	.....	.....	.....	375 33	
Pumping stations: Union Park street.....	8,028 73	6,803 27	.....	.....	1,620 20	.....	.....	.....	.....	.....	205 26	
Summer street.....	2,138 82	1,493 59	.....	.....	624 93	.....	.....	.....	.....	.....	20 30	
Hyde Park.....	1,571 60	1,473 96	.....	.....	93 64	.....	.....	.....	.....	.....	4 00	
Total	\$289,649 49	\$169,994 34	\$3,020 00	\$657 34	\$80,653 62	\$2,228 60	\$2,585 00	\$1,184 34	\$285 16	\$624 08	\$27,067 52	\$1,349 49

Recapitulation — Maintenance Detail, 1928.

	Improved Sewerage.	Outside Improved Sewerage.	Totals.
Labor	\$169,994 34	\$277,417 30	\$447,411 64
Contracts		76,153 28	76,153 28
Teaming hired and city	3,020 00	14,918 50	17,938 50
Waste	657 34	62 53	719 87
Fuel and power	80,653 62	2,016 68	82,670 30
Oil and gasoline	2,228 60	1,880 08	4,108 68
Packing	2,585 00		2,585 00
Valves	1,184 34		1,184 34
Transportation, etc.	285 16	1,063 05	1,348 21
Horses, etc.	624 08	399 22	1,023 30
Pipe fittings and miscellaneous	26,811 40		26,811 40
Telephones	256 12	658 75	914 87
Automobiles, repairs and supplies	1,349 49	21,671 65	23,021 14
Stock supplies and miscellaneous		37,686 66	37,686 66
	\$289,649 49	\$433,927 70	\$723,577 19
CREDITS.			
<i>Outside Improved Sewerage.</i>			
Labor	\$21,446 00		
Stock	13,408 65		
		34,854 65	34,854 65
Totals	\$289,649 49	\$399,073 05	\$688,722 54

SUPPLIES AND FUEL, ENTIRE SERVICE.

Supplies.

2,749	pounds grease, 18 cents.
3,414	pounds waste, 13 to 17 cents.
1,137	pounds cotton rags, 15 and 16 cents.
4,520.7	gallons engine oil, 19.3 cents.
1,056.3	gallons cylinder oil, 27.5 cents.
10	gallons air cylinder oil, 80 cents.
5	gallons sperm oil, \$1.75.
226	gallons turbine oil, 49.5 cents.
15	gallons lard oil, \$1.75.
1,810	gallons kerosene oil, 10.9 to 12 cents.

Fuel.

1,154,939.5	gallons fuel oil, \$47,063.04.
151.24	tons anthracite, \$1,962.14.

Cleaning Catch-basins, 1928.— (By Contract.)

Districts.	Contractor.	Start and Finish of Work.	Price per Cubic Yard.	Cubic Yards Excavated by Contractor.	Contractor Received by Districts.	Total Basins Cleaned.	Total Drop Inlets Cleaned.	Average Cubic Yards per Basin.	Total Cost of Inspection.	Average Total Cost to City per Basin, Including Drop Inlets.
1. City Proper.....	Montrose Construction Company	{ May 17, 1928 Dec. 1, 1928 }	\$1 50	9,081.56	\$13,622 24	2,475	42	3.66	\$2,188 75	\$6 28
2. Roxbury.....	Patrick J. Healey.....	{ May 28, 1928 Dec. 17, 1928 }	1 60	7,502.39	12,003 83	2,017	41	3.71	1,219 54	6 42
3. South Boston.....	Patrick O'Leary.....	{ May 22, 1928 Sept. 26, 1928 }	1 50	3,589.85	5,384 77	997	14	3.59	1,047 96	6 36
4. Charlestown and East Boston.....	Montrose Construction Company	{ May 16, 1928 Oct. 18, 1928 }	1 57	{ 1,490.91 2,042.75 }	{ 5,547 81 5,547 81 }	{ 490 583 }	3	{ 3.04 3.5 }	983 38	6 06
7. Dorchester and Hyde Park.....	David W. Norton.....	{ May 16, 1928 Dec. 1, 1928 }	1 70	{ 5,094.72 867.37 }	{ 10,135 54 10,135 54 }	{ 1,399 228 }	32	{ 3.63 3.79 }	1,175 54	6 79
Totals.....			.....	29,669.55	\$46,694 29	8,189	139	.....	\$6,615 17	

Total catch-basins cleaned.....	8,189	Total cost: Contractors.....	\$46,694 29
Total drop inlets cleaned.....	139	Inspection.....	6,615 17
		Advertising.....	9 25
			<u>\$53,318 71</u>

Total cubic yards, material removed, 29,669.55.
Average cost per basin, including drop inlets, \$6.40.

Average cubic yards, material removed per basin, 3.614.
Average cost per cubic yard removed, \$1.79.

Sewerage Works.
Expenditures, January 1, 1928, to December 31, 1928.

ACCOUNTS.	Labor.	Teaming.	Materials.	Miscellaneous.	Paid to Contractors.	Totals.
Engineer's salaries.....	\$104,932 76	.....	.....	.....	.....	\$104,932 76
Engineers' expense.....	5,460 28	\$854 00	.....	\$8,661 74	\$1,189 07	16,165 09
Pumping station.....	.....	.....	.....	42 00	900 00	942 00
Sundries.....	1,569 03	.....	\$9,383 82	7,804 16	.....	18,847 01
Land takings and court executions.....	.....	.....	.....	600 00	.....	600 00
New manholes, entire city.....	7,068 08	1,277 62	3,375 38	5,375 00	13,873 19	25,648 02
New catch-basins, South Boston.....	2,669 50	270 50	907 40	33 00	6,518 51	10,398 91
New catch-basins, East Boston.....	224 37	.....	210 00	.....	2,599 31	3,033 68
New catch-basins, Charlestown.....	.....	18 00	72 00	70 50	977 67	1,138 17
New catch-basins, Brighton.....	2,829 94	566 00	1,501 88	5 54	5,071 18	9,974 54
New catch-basins, West Roxbury.....	3,536 25	332 00	1,030 25	.....	4,098 78	8,997 28
New catch-basins, Dorchester.....	4,181 49	748 00	2,026 95	108 55	12,785 22	19,850 21
New catch-basins, Hyde Park.....	786 09	64 00	560 00	.....	7,970 79	9,380 88
New catch-basins, Roxbury.....	5,168 94	1,261 00	1,339 00	364 33	14,503 08	22,636 35
New catch-basins, City Proper.....	15,321 92	1,898 00	6,227 80	1,661 96	4,755 14	29,864 82
Sewers built in entire city.....	89,328 98	2,029 00	40,924 65	18,502 82	698,602 19	849,387 64
Totals.....	\$243,077 63	\$9,318 12	\$67,559 13	\$37,998 35	\$773,844 13	\$1,131,797 36

Sewerage Works, Construction, January 1, 1928, to December 31, 1928, Inclusive.

LOCATION.	Begun.	Finished.	Built by.	Length. (Feet.)	Character.	Amount Expended in 1928.
SOUTH BOSTON.						
Catch-basins and minor drains in E street, from East First street to a point about 1,440 feet northeasterly.						\$170 27
Manholes, catch-basins and catch-basin drain in A street, from Dorchester avenue to Congress street.						154 64
Thomas park, south side from Covington street to a point about 439 feet easterly.						995 12
D street, from West First street to Clafin street.*	Sept. 17, 1928	Nov. 16, 1928	C. Russo	33 80 539 23 802 10 50 14	24" pipe, sanitary. 1' 6" by 2' concrete sanitary. 2' 8" by 4' concrete overflow and 2' 8" by 4' concrete overflow and tide gate chamber. Catch-basin drain. 10 manholes.	22,823 63
G street, from Columbia road to a point about 180 feet northerly.*	Nov. 19, 1928	Dec. 1, 1928	John Williams	181 20 170 40	14 catch-basins. 12" pipe, sanitary. 2 manholes.	1,342 06
EAST BOSTON.						
Ashley street, from Boardman street to Whitby street.	Nov. 30, 1927	April 10, 1928	A. Grande	338 13	10" pipe, sanitary.	11,695 40
Lubec street, from Maverick street to 125 feet northeasterly; Marginal street and outlet in Commonwealth dock; Webster street, east of Lewis street.	Jan. 31, 1928	May 10, 1928	A. Daddario	134 80 74 90 56 60 161 35	10" pipe, sanitary. 10" pipe, surface. 10" pipe, surface. 24" pipe, overflow. 5 manholes.	11,984 24

Barnes avenue, from Saratoga street to Wau- pello road; Bayswater street, from Wau- pello road to Nancia street; Thurston street, from Barnes avenue to Bayswater street. *	Aug. 13, 1928	Sept. 25, 1928	C. Russo.	456.65 483.60 234.45 676.65 667.69 527.20	12" pipe, surface. 12" pipe, surface. 10" pipe, surface. 15" pipe, surface. 12" pipe, surface. Catch-basin drain. 17 manholes. 26 catch-basins.	12,447 53
Border street, from Lexington street to Eutaw street. *	Sept. 20, 1928	Nov. 1, 1928	A. DeStefano & Son, Inc.	560.95 20.20	12" pipe, sanitary. Catch-basin drain. 6 manholes. 1 catch-basin.	3,361 71
St. Andrew road, from Waupello road to Annayoy street and outlet in Nancia street to Bayswater street. *	Dec. 10, 1928	.....	C. Russo.	325 344	10" pipe, surface. 12" pipe, surface. 3 manholes.	69 64
CHARLESTOWN.						
Sullivan square.	April 9, 1928	May 17, 1928	Day labor.	290.90	Catch-basin drain. 8 catch-basins.	4,673 46
Alford street, from 300 feet north of Malden bridge to 600 feet northerly.	May 18, 1928	Aug. 23, 1928	Day labor.	605	15" pipe, surface. 3 manholes.	11,173 15
Short Street court, from Short street to 85 feet southeasterly.	Aug. 3, 1928	Aug. 27, 1928	Pierce Company.	96.20	10" pipe, sanitary. 2 manholes.	966 85
BRIGHTON.						
Faneuil street, Bennett street, Ransom road, Gordon street and Parsons street.	.....	.....	.....	.....	.....	493 25
Lane park, northerly branch, from Foster street to westerly.	.....	.....	.....	.....	.....	190 17
Gardner street, from Alcorn street to Mal- vern street.	.....	.....	.....	.....	.....	230 07
Colborn road, Ransom road, Euston road and Claymoss road.	.....	.....	.....	.....	.....	3,741 68

* Cost not complete.

Sewerage Works, Construction, January 1, 1928, to December 31, 1928, Inclusive.—Continued.

LOCATION.	Begun.	Finished.	Built by.	Length. (feet.)	Character.	Amount Expended in 1928.
WILMINGTON.—Continued.						
Shepard Brook, easterly branch in Arthur-street, from Hiehorn street to North Beacon street.						\$7,180 78
Rose Garden circle, from Foster street easterly.						1,850 00
Beechcroft street, from Faneuil street to 430 feet southerly.	Jan. 13, 1928	Feb. 13, 1928	Charles Struzziery.	429 25	10" pipe, sanitary. 3 manholes.	2,350 87
Commonwealth avenue, from Sutherland road off Colborne road.	Feb. 28, 1928	May 8, 1928	Cook Construction Com- pany.	392 45 19 25 28 25	24" pipe, surface. 12" pipe, surface. Catch-basin drains 3 manholes. 1 catch-basins	8,804 30
Beechcroft street, from existing sewer to Hester street.	April 14, 1928	April 21, 1928	Charles Struzziery.	258 25	10" pipe, sanitary. 1 manhole.	1,021 14
Adamson street, from Everett street to Franklin street.	June 8, 1928	June 30, 1928	A. D. Daddario.	319 75 192 15 172 80 148 00	15" pipe, surface. 12" pipe, surface. 10" pipe, sanitary. Catch-basin drain. 8 manholes. 13 catch-basins.	6,246 72
Gerald road, from Gillard road to Commonwealth avenue.	June 15, 1928	July 24, 1928	L. Balboni.	232 85	15" pipe, surface.	4,837 53
Gillard road, from Foster street to Seminary road.				434 20	10" pipe, surface.	
Lane park, from Foster street, westerly.*				147 00	Catch-basin, drain. 4 manholes. 11 catch-basins.	

Cambridge street, from Windom street to Mansfield street.*	July	7, 1928	July	28, 1928	A. D. Daddario.....	339.23 130.30 124.50 207.00	10" pipe, sanitary. 12" pipe, surface. 10" pipe, surface. Catch-basin drain. 5 manholes. 8 catch-basins.	5,173.76
Brooksdale road, from Parsons street to Ranelagh road.	July	16, 1928	Sept.	5, 1928	L. P. Federico & R. Susi Company.....	567.40	18" pipe, surface, D. S.....	12,107.82
Riverview road, from Parsons street to Ranelagh road.	.....	.....	.....	.....	.....	543.85	12" pipe, surface.	
Ranelagh road to Riverview road	.....	.....	.....	.....	.....	1,841.24	10" pipe, surface.	
Hobart street, from Ranelagh road to 130 feet easterly.	.....	.....	.....	.....	.....	163	Catch-basin drain.	
Parsons street, from North Beacon to Faneuil street.*	.....	.....	.....	.....	.....		18 manholes. 12 catch-basins.	
Alberta street, from Washington street to 300 feet southwesterly.*	Aug.	22, 1928	Sept.	6, 1928	M. DeSisto Company.....	290.13 208.63 119.95	10" pipe, sanitary 10" pipe, surface. 10" pipe, surface. 5 manholes.	2,410.74
Langley road, from Washington street to 580 feet westerly.	Oct.	11, 1928	Nov.	17, 1928	John Williams.....	1,171.28	10" pipe, sanitary.....	5,474.54
Colonial road, from Blenford road to Monastery road.*	.....	.....	.....	.....	.....		9 manholes.	
Western avenue, from Renn street to 250 feet easterly.	Sept.	13, 1928	Nov.	3, 1928	Roxbury Concrete Construction Company.....	228.45	10" pipe, sanitary.....	3,624.74
Perthshire road, from Dunbar street to Summit street, westerly.*	.....	.....	.....	.....	.....	413.63 413.42 119.95	10" pipe, sanitary. 10" pipe, surface. 10" pipe, surface. 6 manholes.	
Athol street, from Brentwood street to Holton street.*	July	31, 1928	Aug.	18, 1928	Foley Construction Company.....	164.42	10" pipe, sanitary..... 1 manhole.	1,066.20

* Cost not complete.

Sewerage Works, Construction, January 1, 1928, to December 31, 1928, Inclusive.—Continued.

LOCATION.	Begun.	Finished.	Built by.	Length. (Feet.)	Character.	Amount Expended in 1928.
BRIGHTON.—Concluded.						
Chiswick road, westerly from Chestnut Hill avenue to about 150 feet westerly.*	Oct. 30, 1928	Nov. 13, 1928	L. P. Federico & R. Susi Company.	164.80	10" pipe, sanitary. 1 manhole.	\$673 40
Hunnewell avenue, from Presentation road to Burton street, North Crescent circle from Brock avenue to about 870 feet easterly.*	Nov. 13, 1928	Dec. 8, 1928	James J. Conway	84.35 134.80 36	12" pipe, surface. 10" pipe, surface. 10" pipe, catch-basin drain. 2 manholes. 8 catch-basins.	1,580 86
WEST ROXBURY.						
Stony Brook, section 10A and Rosindale branch of Stony Brook, from Toll Gate way to Bradeen street.*						1,500 00
La Grange street, from Lasell street to Vermont street, Caspar street, from Metropolitan Sewer to Lasell street, Varick road, from Chiswick road to Temple street, Worley street, from Metropolitan Sewer to Brook Farm road, Beech street, from Alpheus road to Poplar street.						848 15
Rossmore road, from Plainfield street to Forest Hills street; Forest Hills street, from Rossmore road to Lotus street.						875 07
Atlantis street, from Lasell street to Glenham street; Perham street, from Vermont street to Keith street; Knoll street, from existing sewer to Centre street.						184 25

West Border road, from Pellam street to Martin street; West Roxbury Parkway, from Centre street to New York, New Haven & Hartford Railroad; New Park avenue, from West Roxbury Parkway to Beech street; Lasell street, from 150 feet east of Caspar street to Newfield street; Sedgewick street, from existing sewer to South street.*									644 20
Poplar street, from Dale street to Beech street; Bates street, from Beech street to Alpheus road; Jeffers street, from Bates street to Alpheus road; Mansfield street, from Jeffers street, to Alpheus road; Weeks avenue, from Mansfield street to Alpheus road; Alpheus road, from Beech street to Bates street.									442 66
Vermont street and outlet in private land, from Caspar street to Vermont street.									1,314 46
Roslindale avenue, from Beech street to Dudley avenue.									373 72
Woodbrier road, from Centre street to 500 feet southeasterly; private land Woodbrier road to Wedgmore road; Wedgmore road, from Centre street to 500 feet southeasterly; Centre street, from Dedham line to Grove street; Centre street, from Glendale road to Woodbrier road.	Sept. 26, 1927	May 17, 1928	Joseph Todeseu	946.18 158.49 151.43 659.88	12" pipe, sanitary. 4" circular concrete conduit, 24" pipe, surface. 11 manholes. 15" pipe, sanitary.				14,413 48
Midvale road, from Maple street to Corey street; Stillman road, from Stony Brook to Washington street.									169 34
Stimson street, from Washington street to Grove street; Grove street, from Stimson street to Birchwood street; Birchwood street, from Washington street to Grove street.	Oct. 5, 1927	April 4, 1928	Charles Struzziery	129.81 1,066.00 16.85	20" pipe, sanitary. 10" pipe, sanitary. 12" pipe, sanitary.				19,032 12

* Cost not complete.

Sewerage Works, Construction, January 1, 1928, to December 31, 1928, Inclusive.—Continued.

LOCATION.	Begun.	Finished.	Built by.	Length, (Feet.)	Character.	Amount Expended in 1928.
WEST ROXBURY.—Continued.						
Potomac street and outlet in Vermont street.						\$539 23
Hodgdon terrace, from Midvale road to 110 feet southeasterly; Pond circle northerly from Pond street; Guernsey street, from existing conduit to 125 feet, easterly.*						323 40
Hyde Park avenue, from Wymen street to Stony brook; Lindall street, from Ashland street to 100 feet northeasterly; Tremont street, near Madison avenue, Charlestown..						95 47
Ferndale road, from Roslindale Branch Stony brook to Washington street.						381 01
Brook road, from Plainfield street to Forest Hills street.						208 29
Zamora court, from Zamora street westerly.*						377 45
Winchester road, from Centre street to about 600 feet westerly.	Feb. 3, 1928	March 1, 1928	A. Grande.	600 30	10" pipe, sanitary 4 manholes.	2,297 16
Cedar street, from Washington street to 600 feet southeast; Hayes street, from Beech street to 332 feet south; Wolfe street from Dent street to 400 feet northeast; Summit road, from La Grange street to 350 feet southwest; Stellman road, from Secanar road to 132 feet northwest; Secanar road, from Florence street to Stellman road.						740 40
Olmstead street, from Forest Hills street to Peter Parley road; Park lane and private land from Olmstead street to 450 feet easterly.						337 04
St. Joseph street extension, from Woodman street to Arborway.						164 42

Cottage avenue, from Centre street to a point 1,050 feet southeasterly.						1,006 36
Knoll street, from existing sewer to Centre street; St. Peter street, from Boylston street to 360 feet northeasterly.						210 38
Emmons road, from Board of Survey street No. 644 to West Saville street; West Saville street, from Emmons road to La Grange street.						394 84
Nikisch avenue, from Beech street to West Roxbury Parkway.						838 10
Yorktown street, from La Grange street to Potomac street.						100 67
Roy road, from Louder's lane to Winchester road.	April	9, 1928	July	26, 1928	Day labor	28 980
Doneaster street, from Dale street to Metropolitan avenue.*	May	28, 1928	June	28, 1928	Charles Struzziery	176 40 299 67 410 55 89 00
Grove street, from Washington street to Dedham line.	May	14, 1928	June	9, 1928	Charles Struzziery	789 19
Willow street, from Centre street to Dunbar street and outlet in Weld and Dunbar streets.*	May	19, 1928	Aug.	9, 1928	DeCristofaro Brothers Company.	426 25 470 15 699 33 1,335 44 423 02 73 37 320 00
Centre street, from Knoll street to Weld street; Weld street, from Ravenna road to Centre street; Park Front road, from Weld street to Peak Hill road; Peak Hill road, from Park Front road to Cerdan avenue; Burnside avenue, from Peak Hill road to Weld street; Glenburnie road, from Burnside avenue to Cerdan avenue; Cerdan avenue, from Weld street to point 180 feet southwest of Peak Hill road.*	July	9, 1928			A. Cefalo.	6,185 70
						22,291 17

* Cost not complete.

Sewerage Works, Construction, January 1, 1928, to December 31, 1928, Inclusive.—Continued.

LOCATION.	Begun.	Finished.	Built by.	Length. (Feet.)	Character.	Amount Expended in 1928.
<i>WEST ROXBURY.—Continued.</i>						
Westbourne terrace, from Bourne street to summit Neponset avenue at Charmie avenue.	Not awarded.					\$ 50
Centre street, from Grove street to 500 feet south of Linden road; Centre street, from Wedgmore road to Cass street; Arcadia street, from Centre street to Ansonia street.*	June 12, 1928	Dec. 7, 1928	Joseph Todesca	2,531.26 403.17 442.35 36	10" pipe, sanitary. 2' 3" concrete conduit. 15" pipe, sanitary. Catch-basin drain. 22 manholes. 3 catch-basins.	18,845 28
Leviaton street, from Walworth street to Beech street; Liszt street, from Washington street to West Roxbury Parkway and outlet in West Roxbury Parkway to Nikisch avenue.*	July 29, 1928	Sept. 6, 1928	C. Struzziery	553.30 273.66 283.50 52	10" pipe, sanitary. 24" pipe, surface. 2' 3" concrete surface. catch-basin drain. 7 manholes. 3 catch-basins.	7,208 29
Roy road, from Louder's lane to Winchester road; Lila road, from Roy road to Green Hill avenue; Winchester road, from existing sewer to Lila road; Green Hill avenue, from Lila road to 900 feet westerly; Malcolm road, from Green Hill avenue to Arbor View road; Arbor View road, from Malcolm road to Malcolm road.*	Aug. 1, 1928	Nov. 9, 1928	A. Grande	3,557.40	10" pipe, sanitary 19 manholes.	12,866 97
Forest Hill street, from Williams street to Lotus street.*	July 16, 1928	Sept. 10, 1928	A. Cefalo	153.50 539.48 106	20" D. S. pipe, surface. 2' 6" concrete conduit. Catch-basin drain. 4 manholes. 6 catch-basins.	7,971 64
Union avenue, from Green street southwesterly.*	July 27, 1928	Aug. 30, 1928	East Boston Contracting Company.	233.20 26	12" pipe, surface. Catch-basin drain. 1 manhole. 2 catch-basins.	1,729 34

Caspar street, from Lasell street to Addington road; Addington road, from La Grange street to Caspar street; Thurlow street, from Deut street to La Grange street; Potomac street, from Yorktown street to point 600 feet southeasterly.*	Aug.	23, 1928	Oct.	5, 1928	John Williams.	1,422.44 398.55 272.70	10" pipe, sanitary. 10" pipe, sanitary. 10" pipe, surface. 14 manholes.	7,335 20
Willowdean avenue, from Russey brook and Parklawn road to Church street; Weld street, from Willowdean avenue to Parklawn road; Parklawn road, from Weld street to Willowdean avenue; Reddon road, from Weld street to Willowdean avenue; Church street, from Parklawn road to Pierpont street; Burwell road, from Church street to Theodore Parker road.*	Aug.	13, 1928	Oct.	25, 1928	A. Cefalo.	36 544.75 348.10 652.90 558.80 497.55 904.73 358 82.50	24" cast-iron pipe, (overflow). 24" D. S. pipe, surface. 18" D. S. pipe, surface. 15" pipe, surface. 12" pipe, surface. 10" pipe, surface. 27 3/4 concrete conduit. Catch-basin drain. 15" pipe, culvert. 21 manholes. 19 catch-basins.	16,898 94
Wyvern street, from Florence street to Hyde Park avenue and outlet in Florence street.*	July	25, 1928	Sept.	28, 1928	C. Russo.	130.30 194 170 89.35 42	24" D. S. pipe, surface. 15" pipe, surface. 12" pipe, surface. 10" pipe, surface. Catch-basin drain. 5 manholes. 3 catch-basins.	4,358 17
Walk Hill street, from Bourne street to 500 feet southeasterly.*	Sept.	5, 1928	Nov.	9, 1928	M. DeSisto Company.	399.60	10" pipe, sanitary. 2 manholes.	3,674 88
Sanborn avenue, from Varick road to Welland road.*	Sept.	14, 1928	Nov.	13, 1928	Joseph Todesca.	1,282.75 427.40 324.90 274.60 264.70	10" pipe, sanitary. 18" D. S. pipe, surface. 15" pipe, surface. 12" pipe, surface. 10" pipe, surface. 12 manholes.	6,901 72
West Roxbury Parkway, west side, from Parkvale road to Church street.*	Aug.	28, 1928	Oct.	4, 1928	Charles Struzziery.	672.20	10" pipe, sanitary. 5 manholes.	2,504 09
Gardner street, from Rivermoor street to Baker street.*	Oct.	3, 1928	Dec.	1, 1928	A. Piatelli.	1,102.82 673.41 258.14 313	20" pipe, surface D. S. 18" pipe, surface. 15" pipe, surface. Catch-basin drain. 8 manholes. 20 catch-basins.	14,852 37

* Cost not complete.

Sewerage Works, Construction, January 1, 1928, to December 31, 1928, Inclusive.—Continued.

LOCATION.	Begun.	Finished.	Built by.	Length. (feet.)	Character.	Amount Expended in 1928.
<i>WEST ROXBURY.—Continued.</i>						
Dudley avenue, from Amherst street to Bird street; Clarendon avenue, from Hillside avenue to Clarendon park.*	Oct. 2, 1928	Nov. 22, 1928	L. Balboni.....	199.28 204 339.65 320.50	10" pipe, sanitary..... 10" pipe, surface. 10" pipe, sanitary. 12" pipe, surface, 7 manholes.	\$3,797 31
Barlow street, from Wachusett street to end of street, about 200 feet southeasterly.*	Oct. 4, 1928	Dec. 11, 1928	James J. Conway.....	196.70	10" pipe, sanitary..... 1 manhole.	1,291 27
Neponset avenue, at Charme avenue.....	May 29, 1928	June 11, 1928	L. J. Nawn, Inc.....	84	10" pipe, sanitary..... 2 manholes.	767 86
Pleasant street, from Pleasant avenue to Mt. Vernon street.	Aug. 9, 1928	Aug. 16, 1928	D. M. Biggs Company.....	80.23	10" pipe, sanitary..... 1 manhole.	679 93
Private land, outlet for Parley avenue.....	Aug. 16, 1928	Aug. 25, 1928	D. M. Biggs Company.....	120.55	10" pipe, sanitary..... 1 manhole.	888 17
Rosindale branch of Stony brook.....	.....	.....	.....	.....	.....	100 00
Woodbrier road, from Centre street to a point 590 feet southeasterly.*	Nov. 13, 1928	Dec. 27, 1928	Joseph Todesca.....	47.89 230.94 182.26 68	10" pipe, sanitary..... 24" D. S. pipe, surface. 3' 6" concrete conduit. Catch-basin drain. 4 manholes. 5 catch-basins.	5,332 16
Cornell street, from Washington street to Kittredge street.	.....	.....	.....	.....	.....	7 75
Whipple avenue, from 150 feet northeast of Washington street to 275 feet southeast; Corey street, from 145 feet northwest of Addington road to 85 feet southeast; Neponset avenue, from Charme avenue to Byrd avenue; Selwyn street, from 225 feet northwest of Walter street to 175 feet southeast.*	Nov. 6, 1928	Dec. 3, 1928	L. P. Federico & R. Susi Company.	276.90 85.90 227.05 170 160	10" pipe, sanitary..... 10" pipe, sanitary. 10" pipe, sanitary. 10" pipe, sanitary. 10" pipe, surface. 8 manholes.	2,680 89

Greaton road, from Weld street to Selhimer road; Russett road, from Weld street to Selhimer road.*	Nov.	12, 1928	Nov.	21, 1928	C. Russo.....	113	Catch-basin drain. 9 catch-basins.	1,655 77
Elmwood street, from Glendale road to Baker street.*	Dec.	18, 1928			A. Grande.....	40	10" pipe, sanitary.....	66 10
Forest Hills circle, from Forest Hills street westerly; private land and Reven circle, from Washington street to 600 feet westerly.*	Dec.	27, 1928			V. Barletta Company.....	119 115	12" pipe, sanitary..... 15" pipe, sanitary..... 1 manhole.	65 00
Washington street, from Ivercliff avenue to Washington Heights avenue.*								79 50
DORCHESTER.								
Oakland street, from Fayre street to Wood avenue; Colorado street, from Croyden street to Oakland street; Croyden street, from Itasca street to Alabama street; Itasca street, from Croydon street 62 feet south to private land; private land, from Halliwell street to Savannah avenue; private land, north of Oakland street, from Savannah avenue to Itasca street; Savannah avenue, from 100 feet northeast of Oakland street to 257 feet northeast; Alabama street, from Croydon street to Canaan street; Canaan street, from Alabama street to Livermore street; Ashland street, from Wood avenue to Washington street, West Roxbury.*	Aug.	15, 1927			A. Barufaldi.....	203 40 240 40 95 40 65 17 10 84 83 50 416 1,061 123 1,602	12" pipe, sanitary..... 10" pipe, sanitary..... 12" pipe, surface..... 18" pipe, surface..... 3" circular concrete conduit, 80 manholes. 5 catch-basins. 6" circular concrete conduit. 4' 6" circular concrete conduit. 5' 3" circular concrete conduit. 3' 6" circular concrete conduit. 1' 3" by 2' 0" concrete sewer	80,253 64
Norfolk terrace, from Norfolk street to New York, New Haven & Hartford Railroad, Ormond street, Myrtlebank avenue, Hazleton street, Chester street, Hillsboro road and Holborn street.								359 68
Southern Artery, from Neponset avenue to 150 feet southerly.								227 82
Crowell street, from Norfolk street to Evans street.								78 87

* Cost not complete.

Sewerage Works, Construction, January 1, 1928, to December 31, 1928, Inclusive.—Continued.

LOCATION.	Begun.	Finished.	Built by.	Length. (feet.)	Character.	Amount Expended in 1928.
DORCHESTER.—Continued.						
Elm avenue, from Burgoyne street to Wilcox road.						\$79 07
Frontenac street, from Lucerne street to Blue Hill avenue.						57 60
Hosmer street, from existing sewer about 388 feet from Norfolk street to about 400 feet northwesterly.						155 73
Mildred avenue, from Babson street to playground; Quincy street, from Warren street, Roxbury, to Columbia road, Dorchester.						378 33
Donald road, from Blue Hill avenue to Harvard street.						66 64
Hazleton street, from Hillsboro road to about 415 feet southeast.						42 51
Adams street, from existing sewer 18 feet north of Fairview street to 120 feet northerly.						81 60
Rockdale street, from Oakland street to Randolph road.						1,102 40
Vera street, from Southern Artery to 280 feet northerly; Southern Artery from Oakridge street to 80 feet west of Vera street; Druid street, from Morton street to Southern Artery and north in Morton street, from Oakridge street to Druid street.	Oct. 11, 1927	March 2, 1928	George J. Regan.	647 79 145 44 31 30 148 20	12" pipe, sanitary. 12" pipe, sanitary. 12" pipe, surface. 3 manholes. 6" pipe, surface.	10,863 11
Winston road, from Lucerne street to Willow-wood street.						153 28

Ginita street, from existing brick sewer 20 feet southeast of Centre street to 130 feet southeasterly.												113 87
Charlemont street, from Chelmsford street to 425 feet northerly.												59 20
Owencroft road, from Southern Artery to Hurloft avenue extension.												383 44
Rangeley street and outlet in private land, from Southern Artery to Milton street.												467 99
Southern Artery, south side, from Emerson avenue 90 feet west and 170 feet east; Emerson avenue, from Morton street to Southern Artery.	Feb.	6, 1928	April	26, 1928	C. Russo.	72 88 1,086 83	12" pipe, sanitary. 10" pipe, sanitary. 7 manholes.					9,328 04
Livingstone street, from Ashton street to Lucerne street.	Dec.	22, 1927	Jan.	2, 1928	M. DeSisto Company.							647 22
Dyer avenue, from Blue Hill avenue to 335 feet northwest; Harvard street, from 195 feet northeast of Hazleton street to 190 feet northeasterly.	Dec.	21, 1927	Jan.	17, 1928	C. Russo.	65 346 67	10" pipe, sanitary. 12" pipe, sanitary. 3 manholes.					2,773 13
Davenport Brook, from existing culvert at Southern Artery about 800 feet west to existing concrete culvert.	March	26, 1928	Dec.	29, 1928	T. J. O'Connell.	802 51	7' 9" by 6' 2" double channel concrete conduit. 6 manholes.					53,844 82
Westmoreland street extension, from existing sewer in Westmoreland street 28 feet west of Hershshire street to 316 feet westerly.	March	6, 1928	April	9, 1928	A. Grande.	306 55	10" pipe, sanitary. 2 manholes.					1,244 27
Carrolla street, from existing brick sewer 195 feet southeast of Centre street to 92 feet southeasterly; Claymont terrace, from Neponset avenue to 202 feet southwesterly; Milton street, from Adams street to New York, New Haven & Hartford Railroad.*	May	3, 1928	May	31, 1928	A. Piatelli.	94 30 253 90 252 90	10" pipe, sanitary. 12" pipe, sanitary. 10" pipe, sanitary. 7 manholes.					3,502 09
Humes road, from Newhall avenue to 1,154 feet northwesterly.	April	9, 1928	June	25, 1928	Day labor.	269 45	10" pipe, sanitary. 3 manholes.					1,885 27
Dyer avenue, from 340 feet northwest of Blue Hill avenue to 360 feet northwesterly.*	June	12, 1928	July	27, 1928	M. DeSisto Company.	357 60	10" pipe, sanitary. 2 manholes.					2,999 58

* Cost not complete.

Sewerage Works, Construction, January 1, 1928, to December 31, 1928, Inclusive.—Continued.

LOCATION.	Begun.	Finished.	Built by.	Length. (Feet.)	Character.	Amount Expended in 1928.
DORCHESTER.—Continued.						
Allendale avenue, from existing sewer, 215 feet southeast of Marsh street to 355 feet southeast; Lenoxdale avenue, from existing sewer 240 feet from Milton street 124 feet easterly; Southern Artery, from 90 feet west of Emerson avenue, to 70 feet west.	June 9, 1928	June 23, 1928	L. Balboni.....	356.30 120.15 70.35	10" pipe, sanitary. 10" pipe, sanitary. 10" pipe, sanitary. 2 manholes.	\$2,147 67
Greenfield road, from New York, New Haven & Hartford Railroad to Ridge road.*	May 29, 1928	July 31, 1928	Zoppo & Civitarese.....	302.00 253.20 182.40 318.00 636.10 119.60 33.30 37.00 131.30 180.00	24" pipe, surface D. S. 20" pipe, surface D. S. 18" pipe, surface. 15" pipe, surface. 12" and 10" pipe, surface. 10" pipe, sanitary. 10" pipe, surface. 2' 6" concrete conduit. 5' concrete conduit. Catch-basin drain. 27 manholes. 20 catch-basins.	17,065 79
Oldfield street, from Columbia road to 310 feet northwesterly.*	June 11, 1928	July 27, 1928	P. Guarino.....	309.95	12" pipe, sanitary..... 2 manholes.	3,504 63
Southern Artery, south side, from 35 feet west of Grayson street to Cushing Hill avenue.	May 4, 1928	July 17, 1928	Day labor.....	578.72	12" pipe, sanitary..... 4 manholes.	5,302 56
Southview street, from Savin Hill avenue to southwest and southeast about 350 feet.*	June 15, 1928	July 11, 1928	P. Guarino.....	361.05	12" pipe, sanitary..... 5 manholes	2,062 99
Wilmington avenue, from Ogden street to Nevada street; Ogden street, from Washington street to Wilmington avenue; Tonawanda street, from Greenbrier street to Claybourne street.*	June 11, 1928	Aug. 21, 1928	James J. Conway.....	349.20 399.50 203.60 152	12" pipe, surface..... 12" pipe, surface. 15" pipe, surface. Catch-basin drain. 10 manholes. 9 catch-basins.	6,119 83

Dorchester avenue, west side, from Harbor View street to Taft street; Pleasant street, from East Cottage street to Taft street.*	July	6, 1928	July	26, 1928	DeCristofaro Brothers Company.	77.90 455.12 195.20	12" pipe, surface. 15" pipe, surface. 12" pipe, sanitary. 9 manholes.	6,138 00
Greendale road, from Courtland road to Wellington Hill street.*	July	23, 1928	Aug.	16, 1928	DeCristofaro Brothers Company.	737.70 75	12" pipe, surface. Catch-basin drain. 4 manholes. 4 catch-basins.	5,302 22
Supple road, from Columbia road to Norwandy street; Nevada street, from Codman street to Codman Hill avenue.*	Aug.	6, 1928	Sept.	15, 1928	East Boston Contracting Company.	210.70 444.70 44	12" pipe, sanitary. 12" pipe, surface. Catch-basin drain. 5 manholes. 3 catch-basins.	4,524 46
Olney street, from Geneva avenue to Cedar avenue.*	Aug.	13, 1928	Oct.	19, 1928	Charles Struzziery.	283 90	12" pipe, sanitary. 2 manholes.	3,347 35
Becket street, from Southern Artery to Van Winkle street; Southern Artery, from Becket street to 85 feet east of Nagdala street.*	Aug.	2, 1928	Sept.	4, 1928	P. Guarino	316.65 522.78 123.90 50	15" pipe, surface. 10" pipe, surface. 10" pipe, sanitary. Catch-basin drain. 8 manholes. 4 catch-basins.	4,310 64
St. Gregory street, from Washington street to 460 feet easterly.*	Sept.	5, 1928	Sept.	26, 1928	John Williams	323.85 309.45	10" pipe, sanitary. 12" pipe, surface. 7 manholes.	2,573 65
Walk Hill street, from Wellington Hill footway to Harvard street.*	Sept.	8, 1928	Oct.	8, 1928	L. P. Federico & R. Susi Company.	985.30 898.48	15" and 12" pipe, surface. 12" pipe, sanitary. 9 manholes.	7,980 17
Wentworth terrace, from Wentworth street to 470 feet easterly.*	Aug.	28, 1928	Sept.	8, 1928	L. P. Federico & R. Susi Company.	488.78 488.05	12" pipe, sanitary. 12" pipe, surface. 8 manholes.	3,483 45
Oakton avenue, from Plain street to Adams street; Hollingsworth street, from Randolph road to 320 feet southwesterly.*	Sept.	17, 1928	Nov.	3, 1928	M. DeSisto Company.	178.05 441.45 1,084.88 314.20 231	10" pipe, sanitary. 15" pipe, surface. 12" pipe, surface. 10" and 12" pipe, surface. Catch-basin drain. 16 manholes. 13 catch-basins.	9,134 69

* Cost not complete.

Sewerage Works, Construction, January 1, 1928, to December 31, 1928, Inclusive.— Continued.

LOCATION.	Begun.	Finished.	Built by.	Length. (feet.)	Character.	Amount Expended in 1928.
DORCHESTER.— Continued.						
Woodfield street, and Southern Artery and outlet in Branton street.*	Sept. 4, 1928	Sept. 17, 1928	P. Guarino.....	277.95 438.60	10" pipe, sanitary..... 10" pipe, sanitary. 5 manholes.	\$2,619 00
Columbia road, from Bodwell street to 75 feet northeasterly.*	June 18, 1928	July 14, 1928	D. M. Biggs Company.....	90.10	8" pipe, sanitary..... 1 manhole.	602 31
Pasadena Road extension, from Normandy street to Blue Hill avenue.*	Sept. 26, 1928	Oct. 9, 1928	John Williams.....	235.70 35.20 49.75 228.90	10" pipe, sanitary..... 10" pipe, sanitary. 10" pipe, surface. 12" pipe, surface. 4 manholes.	2,315 72
Neponset avenue, from Bertram street to 50 feet south of Blackwell street.*	Oct. 5, 1928	Dec. 6, 1928	Charles Struzziery.....	604.75	15" and 12" pipe, sanitary..... 1 manhole.	6,885 79
Rockdale street at Oakland street.....	April 25, 1928	May 3, 1928	Day labor.....	53	10" pipe, surface.....	70 96
Davenport brook, from Southern Artery to Hallett street.*	Aug. 15, 1928	Dec. 29, 1928	T. J. O'Connell.....	327.49	7' 9" by 6' 2" double channel concrete conduit.	21,749 29
Oakland street, from Favre street to Harvard street.*	Aug. 21, 1928	Sept. 29, 1928	A. DeStefano & Son, Inc....	18 22 130	10" pipe, sanitary..... 20" pipe, surface. Catch-basin drain. 1 manhole. 6 catch-basins.	1,738 48
Murray terrace, from Brook street to 200 feet southeasterly.*	Oct. 25, 1928	Nov. 3, 1928	John Williams.....	231.35	12" pipe, sanitary..... 2 manholes.	748 19
Dillingham street, from 140 feet north Savin Hill avenue to 585 feet northerly.	Oct. 4, 1928	Oct. 20, 1928	L. P. Federico and R. Susi Company.	584.90 120	12" pipe, surface..... Catch-basin drain. 4 manholes. 4 catch-basins.	2,246 78
Southern Artery and outlet in Stone terrace.*	Dec. 18, 1928	.....	T. J. O'Connell.....	200	24" pipe, surface.....	147 52

Walk Hill street, from Harvard street to Wellington Hill Footway; Bateswell road, from Beaumont street to Elm road; River street at Blake street and at Thorne street.*	Nov. 1, 1928	.....	East Boston Contracting Company.	67	12" pipe, surface. 8 catch-basins.	1,735 35
Hoemer street, from Blue Hill avenue to Norfolk street.*	Nov. 13, 1928	Dec. 5, 1928	L. Balboni.....	917 90 70	12" pipe, surface. Catch-basin drain. 4 manholes. 4 catch-basins.	4,533 81
Auckland street, from Bay street across Dewar street; Dewar street, from Dorchester avenue to Auckland street.*	Nov. 1, 1928	Nov. 20, 1928	Samuel J. Tomasello.....	92 70 137	12" pipe, surface. Catch-basin drain. 1 manhole. 9 catch-basins.	4,824 90
Beach street, from Harrison park to 400 feet southwest.	Nov. 9, 1928	Dec. 6, 1928	A. Grande.....	415 10	10" pipe, sanitary. 3 manholes.	2,128 21
Ceylon road, from Quiney street to Columbia road.*	Nov. 9, 1928	Nov. 21, 1928	J. C. Coleman & Sons Company.	72	Catch-basin drain. 8 catch-basins.	1,935 30
Columbia road, from 70 feet northeast of Bodwell street to 60 feet northeast.*	Dec. 7, 1928	Dec. 13, 1928	D. M. Biggs Company.....	59 50	8" pipe, sanitary. 1 manhole.	61 07
HYDE PARK.						
Sunnyside street, from Roxanna street to Church street, and outlet in Roxanna street; Violante street, from River street to 260 feet northeast; Milton street, from Adams street to Millwood street.	.....	.....	.....	.....	.....	343 38
Sunnyside street, from Glenwood avenue to Franklin street.	.....	.....	.....	.....	.....	62 80
River street, from Oakland street to Central avenue; Arlington street, from Pierce street to River street; Pierce street, from West street to Arlington street; Blake street, from River street to 380 feet northwest; private land, from River street to Neponset avenue.	Aug. 15, 1927	May 29, 1928	DeCristofaro Brothers Company.	34 18 257 47 56 52 552 35 224 55 980 1,168	5' 9" concrete conduit. 4' concrete conduit. 3' 3" concrete conduit. 2' 6" concrete conduit. 24" 18", 15", 12" and 10" pipe, sanitary. 24", 18", 15", 12" and 10", pipe surface. Catch-basin drain. 29 manholes. 24 catch-basins.	38,834 06

* Cost not complete.

Sewerage Works, Construction, January 1, 1928, to December 31, 1928, Inclusive.—Continued.

LOCATION.	Begun.	Finished.	Built by.	Length. (feet.)	Character.	Amount Expended in 1928.
HYDE PARK.—Continued.						
River street, from Perkins avenue to Cleveland street and outlet in Barry street.....	Jan. 14, 1928	April 14, 1928	John Williams	278.38 225.08 50.45 117.00	24" pipe, surface..... 20" pipe, surface. 15" pipe, surface. Catch-basin drain. 7 manholes. 7 catch-basins.	\$6,312 39
Reservoir street, from Milton street to 355 feet easterly.	Dec. 12, 1927	Jan. 5, 1928	L. Balboni.....	6.65	10" pipe, sanitary	1,575 85
Summit street, from Metropolitan avenue to Reservoir street, and Metropolitan avenue, from 130 feet southeast of Highland street to Summit street; Caton street, from River street to Hollingsworth street.*	June 29, 1928	Oct. 31, 1928	M. DeSisto Company	398.40 607.90 500 30	10" pipe, sanitary	7,086 08
River street, from Lexington avenue to 35 feet north of Arlington street.*	May 14, 1928	May 24, 1928	DeCristofaro Bros. Company.	18 282.90 401.85	10" pipe, sanitary	86 44
Dana avenue, from Water street to Loring street.	July 30, 1928	Aug. 23, 1928	Zoppo & Civitarese.....	426.94 390.04 174.76 64.15 127	24" D. S. pipe, surface..... 18" pipe, surface. 15" pipe, surface. 12" pipe, surface. Catch-basin drain. 6 manholes. 6 catch-basins.	6,141 85
Clifford street, from Milton street to 940 feet southwesterly.*	July 20, 1928	Aug. 30, 1928	A. Piatelli.....	961.76	12" pipe, sanitary	4,479 02
Behnel road, from Osceola street to Hopewell road.*	Aug. 20, 1928	Aug. 28, 1928	L. P. Federico & R. Susi Company.	809	10" pipe, sanitary	2,652 07
Rutledge road, from Ralston road to Roseberry road.*	Aug. 22, 1928	Oct. 3, 1928	James J. Conway.....	506.82	12" pipe, sanitary	3,746 04

Dana avenue, from existing sewer 640 feet southeast of Washington street to 400 feet southeasterly.*	Oct.	5, 1928	Nov.	24, 1928	Cook Construction Company.	400.60	12" pipe, sanitary. 2 manholes.	3,219 57
Clifford street, from Irving street to Hawthorne street; Neponset avenue, from existing sewer 175 feet southeast of Summit street to 275 feet southeast.*	Nov.	21, 1928	Dec.	15, 1928	A. Grande.	316.15 289.43	12" pipe, sanitary. 10" pipe, sanitary. 5 manholes.	2,364 73
ROXBURY.								
Riverway, from Deaconess road to Berners street.	May	14, 1928	June	13, 1928	L. Balboni.	604.24 780.94	12" pipe, sanitary. 12" pipe, surface. 7 manholes.	8,550 59
Moreland street, from Warren street to Blue Hill avenue.*	June	15, 1928	Aug.	9, 1928	M. F. Gaddis.	236	Catch-basin drain. 2 manholes. 18 catch-basins.	6,155 07
Logan street, from about 183 feet northwest of Thornton street to about 110 feet northwesterly.	July	25, 1928	Aug.	18, 1928	John Williams.	126	10" pipe, sanitary. 2 manholes. 5 catch-basins.	2,751 38
Clarence street, between 178 feet east of Dudley street and 90 feet westerly.	Aug.	8, 1928	Aug.	18, 1928	John L. Kelly.	90	8" pipe, sanitary. 1 manhole.	850 87
Heath street, from Columbus avenue to South Huntington avenue.*	Sept.	24, 1928	Nov.	15, 1928	J. C. Coleman & Sons, Inc.	127	Catch-basin drain. 9 catch-basins.	3,089 45
Cheney street, from Hartwell street to 200 feet northwesterly.								40 68
Dudley street, from Harrison avenue to Blue Hill avenue.								156 31
Brookline avenue, from Fenway to Brookline town line.								268 91
Bowditch court, from Warren street to about 165 feet westerly.								32 37
Harold street, from Walnut avenue to Howland street.								218 18
Hampden street, from Albany street to a point about 100 feet southerly.	Nov.	10, 1927	Jan.	7, 1928	A. D. Daddario.	25	6' by 6' 6" concrete, sanitary.	2,487 60

* Cost not complete.

Sewerage Works, Construction, January 1, 1928, to December 31, 1928, Inclusive. — Concluded.

LOCATION.	Begun.	Finished.	Built by.	Length. (Feet.)	Character.	Amount Expended in 1928.
CITY PROPER.						
Paneti Hall square, Dock square and Union street.	.....	.....	.....	.....	.....	\$533 39
Kneeland street, from Atlantic avenue to Washington street.	.....	.....	.....	.....	.....	515 75
Piedmont street, from Church street to Arlington street.	.....	.....	.....	.....	.....	1,129 71
Washington street, from Dover street to Massachusetts avenue; Marginal street about 400 feet west of Jeffries street; East Broadway, from L street to Farragut road; Fernald terrace, from Quincy street, north-easterly to end.	.....	.....	.....	.....	.....	714 76
Belvidere street, from Dalton street to Massachusetts avenue.	April 9, 1928	June 25, 1928	Day labor	60 85 30 00 48 95 366 40 226 60	10" pipe, sanitary 12" pipe, sanitary. 12" pipe, surface. 15" pipe, surface. 18" pipe, surface.	10,467 13
St. Paul street, from Falmouth street to Norway street.	May 3, 1928	June 8, 1928	DeCristofaro Brothers Company.	291 24 205 90 24 00	12" pipe, sanitary 12" pipe, surface. 12" cast-iron pipe, surface. 7 manholes.	9,106 91
Causeway street, from Beverly street to Friend street.*	June 22, 1928	July 17, 1928	A. D. Daddario	38 50 208 00	18" pipe, sanitary Catch-basin drain. 3 manholes. 6 catch-basins.	4,556 62
Buckingham street, from Clarendon street to Dartmouth street.	July 30, 1928	Sept. 1, 1928	A. Cefalo.	432 430 13 87	15" pipe, sanitary (low level). 15" pipe, sanitary (high level). 15" overflow. Catch-basin drain. 5 manholes. 5 catch-basins.	10,552 62

Randolph street, from Harrison avenue to Albany street, Iroquois street, Parker street and Warren street, Roxbury.*	July 30, 1928	Aug. 31, 1928	DeCristofaro Brothers Company.	495.55 340	12" pipe, surface. Catch-basin drain. 7 manholes. 20 catch-basins.	10,565 76
Clark street, from North street to Hanover street.*	Aug. 30, 1928	Oct. 19, 1928	M. DeSisto Company.....	313.50	15" pipe, sanitary 2 manholes.	4,065 25
Canden street, from Washington street to New York, New Haven & Hartford Railroad.*	Aug. 30, 1928	Sept. 18, 1928	J. C. Coleman Sons Company, Inc.	24 126 70 173	15" pipe, sanitary 12" pipe, surface. Catch-basin drain. 3 manholes. 12 catch-basins.	5,896 77
Alley No. 825 and outlet in Alley No. 824 *...	Oct. 29, 1928	.....	P. Gurrino.....	360	15" pipe, sanitary 1 manhole.	2,522 10
Myrtle street, from Anderson street to 120 feet westerly.*	Nov. 15, 1928	Nov. 23, 1928	A. A. R. Doyle.....	118.20	10" pipe, sanitary 1 manhole.	1,166 82

* Cost not complete.

East Boston Pumping Station and Outlets.

LOCATION.	Begun.	Finished.	Built by.	Length. (Feet.)	Character.	Amount Expended in 1928.
Porter street outlet from Boston Harbor to Cottage street.	Jan. 27, 1928	.....	C. & R. Construction Company.	3,008	12' by 10' concrete conduit 10 manholes.	\$190,428 20

Recapitulation.

DISTRICTS.	Linear Feet Sewers.	Linear Feet Catch-basins Drain.	Manholes.	Catch-basins.	Amount Expended in 1928.
South Boston.....	1,595.67	181	12	14	\$25,495 72
East Boston.....	4,504.77	547.20	30	27	39,922 20
Charlestown.....	701.20	290	5	8	16,813 46
Brighton.....	9,591.28	729.25	65	53	69,009 12
West Roxbury.....	38,882.78	1,523	226	98	226,272 20
Dorchester.....	28,859.17	1,212	258	92	308,542 67
Hyde Park.....	9,223.33	1,442	73	39	76,904 28
Roxbury.....	1,686.18	464	12	32	24,604 41
City Proper.....	3,605.39	808	29	43	61,823 58

New Catch-basins and Manholes Built by Day Labor and Contract
January 1, 1928, to December 31, 1928, Inclusive.

DISTRICTS.	Catch-basins.	Manholes.	Total Cost.
South Boston.....	37	6	\$12,198 91
East Boston.....	6	9	5,733 68
Charlestown.....	2	4	2,338 17
Brighton.....	20	2	10,574 54
West Roxbury.....	15	6	10,797 28
Dorchester.....	41	6	21,450 21
Hyde Park.....	18	1	9,680 88
Roxbury.....	35	20	28,636 35
City Proper.....	60	30	29,512 84
Totals.....	234	84	\$140,922 86

SEWERAGE WORKS LOAN, 1928.

Engineers' salaries, general	\$104,932 76
Amount charged to construction of sewers	37,801 00
	<u>\$142,733 76</u>

ENGINEERING EXPENSE.

Labor	\$5,460 28
Teaming	854 00
Borings	1,189 07
Transportation	3,574 40
Supplies, etc.	5,087 34
	<u>\$16,165 09</u>

PUMPING STATION CONSTRUCTION.

Contracts	\$900 00
Materials, etc.	42 00
	<u>\$942 00</u>

SUNDRIES.

Labor	\$1,569 03
Materials	64,424 74
Miscellaneous	7,894 16
	<u>\$73,887 93</u>
Less material charged to jobs	55,040 92
	<u>\$18,847 01</u>

COURT EXECUTIONS AND AWARDS ON ACCOUNT OF LAND-TAKINGS, ETC.

T. J. Carey, North avenue, West Roxbury . . .	\$100 00
J. A. Guthroe, Savannah avenue, Dorchester . . .	250 00
Hyman Shapiro, Lorna road, Dorchester . . .	50 00
Francis F. Holland, Dent street, West Roxbury . .	100 00
Patrick Hayes <i>et al.</i> , Orlando street, Dorchester,	50 00
F. C. Twitchell, Vermont street, West Roxbury,	50 00
	<u>\$600 00</u>

Summary of Sewer Construction for Twelve Months Ended
December 31, 1928.

DISTRICTS.	Built by City by Contract or Day Labor.	Built by Private Parties.	Total Length Built.	
	<i>Linear Feet.</i>	<i>Linear Feet.</i>	<i>Linear Feet.</i>	<i>Miles.</i>
City Proper.....	3,635.39	359.10	3,994.49	0.757
Roxbury.....	1,686.18	.....	1,686.18	0.319
South Boston.....	1,595.67	.....	1,595.67	0.302
East Boston.....	7,748.77	.....	7,748.77	1.467
Charlestown.....	701.20	.....	701.20	0.133
Brighton.....	9,324.43	2,006.13	11,330.56	2.146
West Roxbury.....	39,281.91	2,720.17	42,002.08	7.955
Dorchester.....	29,069.34	5,894.04	34,963.38	6.622
Hyde Park.....	9,480.71	299.64	9,780.35	1.852
Totals.....	102,523.50	11,279.08	113,802.68	21.553

**Net Increase in Length of Sewers Between January 1, 1928, and
December 31, 1928.**

DISTRICTS.	Length of Sewers Built During the Twelve Months ended December 31, 1928.	Length of Sewers Re- built or Abandoned During the Twelve Months ended December 31, 1928.	Net Increase for Twelve Months Ended December 31, 1928.	
	<i>Linear Feet.</i>	<i>Linear Feet.</i>	<i>Linear Feet.</i>	<i>Miles.</i>
City Proper.....	3,994.49	1,776.05	2,218.44	0.420
Roxbury.....	1,686.18	169.00	1,517.18	0.287
South Boston.....	1,595.67	165.00	1,430.67	0.271
East Boston.....	7,748.77	1,125.08	6,623.69	1.254
Charlestown.....	701.20	.....	701.20	0.133
Brighton.....	11,330.56	229.50	11,101.06	2.102
West Roxbury.....	42,002.08	227.05	41,775.03	7.912
Dorchester.....	34,963.38	2,704.75	32,258.63	6.110
Hyde Park.....	9,780.35	702.75	9,077.60	1.719
Totals.....	113,802.68	7,099.18	106,703.50	20.208
<i>Total Length of Sewers.</i>				<i>Miles.</i>
Common sewers and surface drains previous to January 1, 1928.....				1,028.59
Net increase of common sewers and surface drains between January 1, 1928, and December 31, 1928.....				20.21
Total common sewers and surface drains to December 31, 1928.....				1,048.80
Intercepting sewers connecting with Metropolitan sewers to December 31, 1928.....				* 6.81
Boston main drainage intercepting sewers to December 31, 1928.....				* 24.12
Grand total of common and intercepting sewers to December 31, 1928..				1,079.73
Total mileage of streets containing sewerage works to December 31, 1928,				630.26

* No additional lengths during year 1928.

**Summary of Sewer Construction for Five Years Previous to
December 31, 1928.**

	1924.	* 1925.	1926.	1927.	1928.
	<i>Linear Feet.</i>	<i>Linear Feet.</i>	<i>Linear Feet.</i>	<i>Linear Feet.</i>	<i>Linear Feet.</i>
Built by city by contract or day labor.....	50,708.89	75,241.99	72,958.49	87,199.14	102,523.60
Built by private parties.....	4,566.88	10,296.40	4,009.55	11,699.24	11,279.08
Totals.....	55,275.77	85,538.39	76,968.04	98,898.38	113,802.68

* Fiscal year changed to end December 31st; data is for eleven months only.

Catch-basins in Charge of Sewer Division.

DISTRICTS.	CATCH-BASIN DATA FOR TWELVE MONTHS ENDED DECEMBER 31, 1928.			TOTAL FOR WHOLE CITY IN CHARGE OF SEWER DIVISION.	
	Number Built or Rebuilt.	Number Abandoned or Removed.	Net Increase.	Previous Report to January 1, 1928.	Grand Total to January 1, 1929.
City Proper.....	116	48	68	3,423	3,491
Roxbury.....	71	23	48	3,056	3,104
South Boston.....	51	31	20	1,321	1,341
East Boston.....	33	.....	33	934	967
Charlestown.....	8	.....	8	786	794
Brighton.....	65	6	59	1,503	1,562
West Roxbury.....	103	.....	103	2,518	2,621
Dorchester.....	175	13	162	3,989	4,151
Hyde Park.....	56	6	50	459	509
Totals.....	678	127	551	17,989	18,540

Table of Approximate Quantities, Lifts and Duties at Calf Pasture Pumping Station, from January 1, 1928, to December 31, 1928, Inclusive.

MONTH.	Total Gallons Pumped.	Average per Day Gallons.	Minimum per Day Gallons.	Maximum per Day Gallons.	Average Lift, Feet.	AVERAGE DAILY DUTY IN MILLION FOOT-POUNDS.	
						Per Gallon Oil.	Per Kilowatt Hour.
January.....	3,112,739,063	100,400,950	90,036,030	131,158,819	35.4	7.1	2.9
February.....	2,841,020,880	97,966,548	78,509,637	157,502,213	35.4	6.9	3.0
March.....	2,791,116,912	90,036,029	68,542,923	123,592,628	35.4	6.9	2.8
April.....	3,147,048,641	104,901,601	74,306,491	160,978,586	35.4	6.8	2.9
May.....	3,434,239,877	110,781,931	78,934,605	136,013,809	35.4	7.3	3.0
June.....	3,577,207,681	119,240,256	83,962,323	160,016,034	35.4	7.5	2.1
July.....	3,587,785,727	115,735,023	71,220,406	135,555,412	35.4	7.2	3.1
August.....	2,890,345,786	93,236,961	74,992,382	118,267,179	35.4	6.9	2.9
September.....	3,063,178,527	102,105,951	69,984,605	152,746,944	35.4	7.2	3.2
October.....	3,936,579,217	97,954,170	75,352,520	122,834,666	35.4	6.9	3.0
November.....	2,799,796,879	93,326,562	68,404,392	101,496,117	35.4	6.8	3.0
December.....	3,027,975,816	97,670,190	68,932,293	105,307,060	35.4	7.0	2.9
Totals.....	37,309,044,006						
Daily averages.....	102,216,560					7.0	2.9

NOTES.—28,090,986,506 gallons pumped by oil, 1,166,351 gallons used.
 9,218,037,500 gallons pumped by electric power, 926,300 K. W. hours used.
 Figures are based on plunger displacement and on pump ratings, no allowance for slip.

**Cost of Pumping at Calf Pasture Pumping Station January 1,
1928, to December 31, 1928, Inclusive.**

ITEMS.	Cost.	Cost per Million Foot Gallons.
Labor.....	\$80,676 50	\$0.06109
Fuel oil 1,166,351 gallons.....	42,528 95	.03220
Electric power, 926,500 K. W. H.....	* 30,449 21	.02305
Coal burning refuse.....	551 43	.00042
Oils and waste.....	1,824 31	.00138
Rubber valves and packing.....	1,539 48	.00117
Miscellaneous supplies and renewals.....	9,194 35	.00696
Major renewals metallic packing No. 5 pump.....	2,445 00	.00185
Cleaning turbine wells four times.....	3,120 00	.00236
Totals.....	\$172,329 23	\$0.13048

* This includes all power for auxiliaries and lighting.

**Sludge Deposited and Removed from Deposit Sewers at Calf
Pasture Pumping Station from January 1, 1928, to December
31, 1928, Inclusive.**

	North Sewer. <i>Cubic Yards.</i>	South Sewer. <i>Cubic Yards.</i>	Total, <i>Cubic Yards.</i>
Sludge in sewers, January 1, 1928.....	453	476	929
Sludge deposited during year 1928.....	1,912	767	2,679
Totals.....	2,365	1,243	3,608
Sludge removed during year 1928.....	483	226	709
Sludge in sewers on January 1, 1929.....	1,882	1,017	2,899

**Amount of Refuse Removed from Gatehouse at Calf Pasture
Pumping Station, January 1, 1928, to December 31, 1928,
Inclusive.**

MONTH.	Number Cheeses.	Weight (Pounds.)
January.....	161	38,801
February.....	143	34,463
March.....	83	20,003
April.....	87	20,967
May.....	74	17,834
June.....	54	13,014
July.....	57	13,737
August.....	77	18,557
September.....	89	21,449
October.....	87	20,967
November.....	98	23,618
December.....	103	24,823
Totals.....	1,113	268,233

Cheeses average 241 pounds.

APPENDIX F.

REPORT OF THE DIVISION ENGINEER OF THE
WATER DIVISION.

BOSTON January 2, 1929.

To the Commissioner of Public Works:

The following report of the operation, income and expenditures of the Water Division for the year ending December 31, 1928, is respectfully submitted.

Building construction and continued property development in the West Roxbury, Dorchester and Brighton districts has called for the greater portion of the pipe laying during the year, 3.5 miles of water pipe was laid in West Roxbury, 2.6 miles in Dorchester and 1.3 miles in Brighton.

The total length of pipe laid for extension of the system was 8.6 miles and the work was executed under twenty-two contracts awarded at various times during the year.

The more important pipe extension was the laying of 2,728 linear feet of 16-inch pipe in Harrison avenue between East Concord and Bristol streets, reinforcing the fire protection to the Boston City Hospital and the manufacturing district adjoining Harrison avenue.

During the year 15,285 linear feet, or 2.9 miles of 4-inch and 6-inch water pipe laid fifty years or more was relaid with 8-inch and 12-inch pipe, improving the fire protection in the more densely populated sections of the city and furnishing the quantity of water demanded by the modern type of fire engines manned by the Boston Fire Department.

Among the longer lengths were:

CITY PROPER.

Hanover street, between Charter and Commercial streets, 760 linear feet of 6-inch and 12-inch relaid with 16-inch pipe.

Hudson street, between Beach and Curve streets, 1,467 linear feet of 6-inch relaid with 12-inch pipe.

Buckingham street, between Clarendon and Dartmouth streets, 451 linear feet of 6-inch relaid with 12-inch pipe.

ROXBURY.

Alaska street, between Perrin street and Blue Hill avenue, 212 linear feet of 4-inch relaid with 8-inch pipe.

DORCHESTER.

Mill street, between Victory road and Freeport street, 1,717 linear feet of 6-inch relaid with 8-inch pipe.

Ashland street, between Everdeen and Park streets, 1,067 linear feet of 6-inch relaid with 8-inch pipe.

Everett street, between Mill and Park streets, 407 linear feet of 6-inch relaid with 8-inch pipe.

Beach street, between Park and Freeport streets, 834 linear feet of 6-inch relaid with 12-inch pipe.

Avondale street, between St. Gregory and Richmond streets, 368 linear feet of 6-inch relaid with 8-inch pipe.

BRIGHTON.

Harriett street, between Hobart and Parsons streets, 529 linear feet of 6-inch relaid with 8-inch pipe.

WEST ROXBURY.

Ashland street, between Harvard and Sutton streets, 979 linear feet of 8-inch relaid with 16-inch pipe.

The widening and reconstruction of Oakland street, West Roxbury, between Rugby road and Harvard street, occasioned the relaying and relocating of 1,520 linear feet of the 16-inch pipe in addition to regulating the pipes to the side streets, etc.

In Morton street, Dorchester, between Washington and Manchester streets, 1,683 linear feet of 12-inch and 10-inch pipes were relocated, lowered, etc., for a similar reconstruction.

Service pipes numbering 2,463 and varying in size from $\frac{5}{8}$ -inch to 12-inch were installed and of this number 118 were 4-inch pipes to furnish sprinkler protection.

The regular work of the Distribution Branch, consisting of repairing leaks, establishing fire and service pipes, freeing stoppages in the older service pipes, shutting off and letting on water, etc., was performed in such manner and at such times as to provide a minimum of delay and discomfort to water applicants,

water takers, and the general public; practically all the work in the business district is now done on Sundays to meet the above conditions.

To comply with the Legislative Acts of 1907, 638 meters were set on old services in existence previous to 1907, and on new service pipes 2,181 meters were established, making a total of 2,819 meters set during the year. On December 31, 1928, the total number of services metered were 96,464 and there remains about 500 miscellaneous services to municipal property, etc., in various sections of the city to meter. With 99.5 per cent of Boston metered, the work of the Meter Branch has increased and in addition to the installation of meters on new and old services, 7,618 meters have been changed and reset and 2,058 meters have been repaired in service.

The collections for all purposes in the Water Division were \$4,314,789.54, and an important factor in the prompt payment of the water bills is the statute making water bills a lien on real estate.

Very respectfully,

C. J. CARVEN,
Division Engineer.

FINANCIAL STATEMENT.

RECEIPTS.

Sales of water	\$4,099,044	58
Fees for summonses	6,078	12
Shutting off and letting on water	322	00
Miscellaneous	209,344	84
Gross income	\$4,314,789	54
Transferred to City Loan account to pay Hyde Park Water Debt	\$16,000	00
Transferred to credit of Collecting Department	56,543	37
		<u>72,543 37</u>
Net income	\$4,242,246	17
Balance January 1, 1928	57,131	80
Total income available for Water Service	\$4,299,377	97

EXPENDITURES.

Current expenses and extensions	\$1,598,068	76
Interest on water loans	47,555	00
Serial loans	214,000	00
Refunded water rates	701	28
Metropolitan water assessment	2,384,682	69
Total expenditures, 1928	4,245,007	73
Balance January 1, 1929	\$54,370	24

APPROPRIATION FOR SERVICE MAINS AND RELAYING MAINS
(FROM REVENUE).

Balance unexpended January 1, 1928	\$26,269	00
Expended during 1928	25,129	22
Balance January 1, 1929	<u>\$1,139</u>	<u>78</u>

APPROPRIATION FOR EXTENSION OF WATER MAINS (FROM LOAN).

Balance unexpended January 1, 1928	\$156,041	91
Expended during 1928	150,161	56
Balance January 1, 1929	<u>\$5,880</u>	<u>35</u>

APPROPRIATION FOR LAYING AND RELAYING STREET WATER MAINS (FROM
LOAN).

Balance unexpended January 1, 1928	\$6,580	18
Expended during 1928	6,580	18
Balance January 1, 1929	<u>\$0,000</u>	<u>00</u>

APPROPRIATION FOR HIGH PRESSURE FIRE SYSTEM EXTENSION.

Balance unexpended January 1, 1928	\$382	00
Expended during 1928	000	00
Balance January 1, 1929	<u>\$382</u>	<u>00</u>

Details of expenditures under appropriations for Water Service for the fiscal year 1928.

		EXTENSION.	
Construction of new mains	.	.	\$110,113 29
Replacement of old mains	.	.	57,311 50
New hydrants	.	.	8,240 53
Total extension	.	.	\$175,665 32
		MAINTENANCE.	
Office and Engineering Branch:			
Salaries and wages	.	\$56,483 06	
Traveling expenses	.	711 02	
Printing, stationery and postage	.	1,706 33	
Miscellaneous	.	768 25	
			\$59,668 66
Income Branch:			
Salaries and wages	.	\$147,741 55	
Traveling expenses	.	1,956 10	
Printing, stationery and postage	.	5,663 35	
Miscellaneous	.	1,750 16	
			157,111 16
Distribution Branch:			
Salaries and wages	.	\$44,023 24	
Traveling expenses	.	352 95	
Printing, stationery and postage	.	1,475 42	
Miscellaneous	.	1,761 33	
			47,612 94
Meter Branch:			
Salaries and wages	.	\$18,225 74	
Traveling expenses	.	29 15	
New meters and setting	.	40,357 48	
Meters, repairing, resetting and testing	.	61,334 50	
Shops	.	19,540 13	
Holiday	.	5,420 73	
Laborers' vacations	.	1,159 96	
Printing, stationery and postage	.	533 71	
Miscellaneous	.	610 46	
			147,211 86
Inspection of castings	.	.	8,224 65
Yards	.	.	93,142 47
Shops	.	.	25,605 94
Damages	.	.	7,795 27
Stables	.	.	5,065 46
Tools and repairs	.	.	17,735 91
Main pipe relocation	.	.	15,359 02
Main pipe repairs	.	.	85,149 45
Service pipes, new	.	.	122,829 11
Service pipes, changes	.	.	16,561 11
Service pipes, repairs	.	.	122,383 72
Hydrant changes	.	.	52,110 36
Hydrant repairs	.	.	74,603 06
Water post, changes	.	.	142 69
Water post, repairs	.	.	208 33
Carried forward	.	.	\$1,058,521 17
			\$175,665 32

<i>Brought forward</i>	\$1,058,521 17	\$175,665 32
Fountains, new	71 43	
Fountains, changes	1,493 91	
Fountains, repairs	4,650 75	
Fountains, on account of ice	1,731 81	
Holiday	66,171 42	
Investigations	1,458 88	
Off and on water	16,786 32	
Accommodation work	5,076 05	
Waste detection and prevention	59 82	
Work on account of office and engineers	2,941 06	
Work on account of Income Branch	151 23	
Work on account of Meter Branch	19 98	
Work on account of new meters	7,788 47	
Work on account of meter repairs	14,371 60	
Launch repairs and supplies	261 59	
Harbor service	3,897 90	
Veterans' pensions	6,206 24	
Laborers' pensions	8,181 32	
Laborers' vacations	23,606 96	
Workmen's compensation	2,811 71	
Emergency service	69,437 86	
Garage	6,019 61	
Medical inspection	600 00	
Light and power	1,548 65	
High Pressure Fire Service	591 00	
Veterinary services	125 00	
Expert services	725 00	
Taxes	278 00	
Regulating boxes	6,887 03	
Snow removal	237 70	
Automobiles	62,193 66	
Total maintenance		1,374,903 13
Merchandise sold and stock consigned to junk		8,504 66
Stock purchased		304,109 25
		<u>\$1,863,182 36</u>
Less stock used and disposed of		265,113 60
Total expenditures from appropriation for Water Service		<u>\$1,598,068 76</u>

Details of expenditures under appropriation for Service Mains and Relaying Mains for 1928. (From revenue.)

EXTENSION.

Construction of new mains	\$19,017 36	
Replacement of old mains	2,343 69	
Total extension		\$21,361 05

MAINTENANCE.

Service pipes new	\$2,568 85	
Hydrant changes	114 11	
Work on account of new meters	1,085 21	
Total maintenance		3,768 17
Total expenditures during 1928		<u>\$25,129 22</u>

Receipts and Expenditures, 1919-1928.

Receipts.

	1919-20.	1920-21.	1921-22.	1922-23.	1923-24.	1924-25.	1925, (11 months.)	1926.	1927.	1928.
Sales of water.....	\$3,244,542 57	\$3,364,037 04	\$3,407,579 24	\$3,694,448 30	\$3,813,571 42	\$3,748,575 28	\$3,079,830 74	\$3,790,408 27	\$3,913,117 00	\$4,099,044 58
Other receipts.....	54,111 33	64,598 71	65,479 69	97,499 70	97,164 30	182,317 83	161,277 84	210,550 90	107,655 59	216,744 96
	\$3,298,653 90	\$3,429,535 75	\$3,473,058 93	\$3,791,918 00	\$3,910,735 72	\$3,930,893 11	\$3,241,108 58	\$4,000,989 17	\$4,080,772 65	\$4,314,789 54
Loan, extension of water mains.....							800,000 00	300,000 00	200,000 00	
Loan, laying and relaying street water mains.....							100,000 00			
	\$3,298,653 90	\$3,429,535 75	\$3,473,058 93	\$3,791,918 00	\$3,910,735 72	\$3,930,893 11	\$4,141,108 58	\$4,300,989 17	\$4,280,772 65	\$4,314,789 54
Balance, beginning of year.....	* \$3,487 89			* \$43,733 95	* \$200,000 00	\$24,141 18	\$26,737 35	\$375,840 01	\$294,170 57	\$246,022 89
Balance, end of year.....			\$43,733 95		24,141 18	26,737 35	† 375,840 01	† 294,170 57	† 246,022 89	† 61,390 37
Transferred to Collecting Department.....	30,317 74	\$3,570 54	34,596 76	46,425 42	50,522 49	58,653 86	51,890 70	55,622 61	53,356 03	56,543 37
Transferred to city loan account.....	390,095 22	209,958 26	161,000 00	250,233 01	113,570 40	16,000 00	10,000 00	16,000 00	16,000 00	16,000 00
Transferred to appropriation for service mains and relaying mains.....				200,000 00	208,180 00	217,638 84	50,123 45	90,000 00	90,000 00	
Transferred to appropriation for High Pressure Fire Service.....				23,000 00						
Transferred to appropriation for High Pressure Fire system extension.....				100,000 00	410,000 00	175,000 00				

Expenditures.

	1919-20.	1920-21.	1921-22.	1922-23.	1923-24.	1924-25.	1925, (11 months.)	1926.	1927.	1928.
Current expenses.....	\$1,010,634 32	\$1,253,166 33	\$1,232,418 76	\$1,896,212 50	\$1,229,573 73	\$1,608,320 10	\$1,309,163 72	\$1,511,407 58	\$1,483,018 23	\$1,598,068 76
Service mains and relaying mains.....	3,487 83				384,038 82	215,042 67	75,930 69	83,065 12	71,595 99	25,129 22
Metropolitan water assessment.....	1,805,104 07	1,885,924 91	1,958,328 33	1,784,257 21	1,872,413 17	1,829,973 63	1,793,423 93	2,090,598 07	2,155,188 41	2,384,082 69
Interest.....	61,162 73	45,874 33	41,852 06	34,449 49	25,534 00	24,680 00	9,800 00	45,280 00	52,940 00	47,555 00
Refunded water rates.....	1,339 82	1,041 38	928 47	1,104 32	941 93	626 68	527 48	343 50	1,052 80	701 28
Loan, extension of water mains.....							615,178 10	346,255 78	282,524 21	150,161 56
Loan, laying and relaying street water mains.....							26,089 21	54,085 95	13,244 66	6,580 18
On account of serial loans.....								180,000 00	200,000 00	214,000 00
	\$2,881,728 77	\$3,186,066 95	\$3,233,728 22	\$3,216,023 52	\$3,512,501 66	\$3,678,643 08	\$3,730,115 13	\$4,311,036 00	\$4,250,564 30	\$4,426,878 69

* Balance of appropriation for service mains and relaying mains.

† \$54,370.24 of this amount is balance of appropriation for "Water Service"; \$1,139.78 of this amount is balance of appropriation for "Service Mains and Relaying Mains" from Revenue; \$5,880.33 of this amount is balance of appropriation for "Extension of Water Mains (Loan)."

‡ Amount expended for current expenses and extensions, there being one appropriation only.

Details of expenditures under appropriation for Extension of Water Mains for 1928. (From loan.)

Construction of new mains	\$150,150 87	
Service pipes new	10 69	
Stock purchased	<u>72,311 34</u>	
	\$222,472 90	
Less stock used	<u>72,311 34</u>	
Total expenditures during 1928		<u>\$150,161 56</u>

Details of expenditures under appropriation for Laying and Relaying Street Water Mains for 1928. (From Loan).

Stock purchased and used on account of construction of new mains	<u>\$6,580 18</u>
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APPROPRIATION FOR OAKLAND AND ASHLAND STREETS IMPROVEMENT.

Laying and relaying water mains on account of street improvements	<u>\$10,796 22</u>
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APPROPRIATION FOR COLUMBUS AVENUE BRIDGE.

Relaying water main on account of Construction of bridge,	<u>\$6,618 55</u>
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APPROPRIATION FOR KNEELAND STREET IMPROVEMENT.

Laying and relaying water mains on account of street improvements	<u>\$3,735 19</u>
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APPROPRIATION FOR CONGRESS STREET BRIDGE.

Advertising on account of water pipe tunnel	<u>\$24 75</u>
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RESERVE FUND.

Expended for ice delivered to drinking fountains	<u>\$5,460 66</u>
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COST OF CONSTRUCTION AND CONDITION OF WATER DEBT.

Cost of construction to December 31, 1928	\$21,643,904 02
Cost of construction to December 31, 1927	21,290,135 91
Increase during the year	<u>\$353,768 11</u>
Outstanding loans December 31, 1927	\$1,228,000 00
Outstanding loans December 31, 1928	998,000 00
Decrease during the year	<u>\$230,000 00</u>
Cost of existing works December 31, 1928:	
Pipe yards and buildings	\$94,832 16
Engineering expenses	57,873 58
Distribution System (additions during year, \$353,768.11)	*21,023,198 28
Hyde Park Water Works	468,000 00
	<u>\$21,643,904 02</u>
High Pressure Fire System	<u>\$2,062,155 92</u>

* Includes \$85,151.50 High Pressure Fire System Extension expended in 1925 and 1926

INCOME BRANCH.

Statement of Each Year's Water Rates, 1912 to 1928, as of December 31, 1928.

YEAR.	Assessments.	Abatements.	Collections.	Outstanding.
1912.....	\$3,001,771 87	\$58,369 39	\$2,943,402 48	
1913.....	3,004,331 52	50,147 90	2,954,183 62	
1914.....	3,034,885 83	64,653 01	2,970,232 82	
1915.....	2,960,797 45	57,782 09	2,903,015 36	
1916.....	3,130,590 53	67,771 69	3,062,818 84	
1917.....	3,120,878 86	77,353 75	3,043,525 11	
1918.....	3,359,714 95	162,415 52	3,197,299 43	
1919.....	3,210,147 91	95,812 76	3,114,335 15	
1920.....	3,503,677 88	123,509 90	3,380,167 98	
1921.....	3,615,663 51	90,946 23	3,524,717 28	
1922.....	3,612,715 51	90,453 27	3,522,262 24	
1923.....	3,817,098 34	77,449 02	3,739,649 32	
1924.....	3,832,531 26	41,954 40	3,781,281 69	\$9,295 17
1925.....	3,875,434 21	38,244 61	3,824,623 06	12,566 54
1926.....	3,910,119 54	43,610 60	3,853,966 30	12,542 64
1927.....	3,978,112 89	39,198 37	3,873,414 98	65,499 54
1928.....	4,416,953 02	17,008 74	3,052,088 12	1,347,856 16

METER BRANCH.

Table No. 1.—Statement of Work During Year 1928.

MAKE.	New Sets.	Discontinued.	CHANGES.		Tested.	Repaired in Shop.	Resets.	Repaired in Service.
			Out.	In.				
Hersey disc.....	184	230	3,168	2,584	6,166	3,240	107	911
Worthington disc.....	90	92	1,073	1,903	3,158	2,240	66	32
Watch dog.....	2,414	122	931	1,723	5,190	1,168	76	615
King.....	39	104	1,855	1,254	3,252	1,558	54	376
Hersey detector.....	12	.....	7	7	26	11	1	17
Hersey rotary.....	2	7	84	26	119	23	.....	5
Crown.....	1	10	90	4	105	5	1	.....
Federal.....	.....	9	73	10	92	10	.....	11
American.....	63	5	136	40	244	109	.....	63
Lambert.....	6	8	68	25	107	47	3	5
Nash.....	5	4	88	17	114	23	2	7
Keystone.....	.....	2	14	3	19	7	.....	2
Trident.....	3	1	19	14	37	14	4	4
Empire.....	.....	1	10	.....	11	.....	.....	.....
Protectus.....	.....	.....	.....	.....	.....	.....	.....	1
Gem.....	.....	.....	2	.....	2	.....	.....	.....
Hersey compound.....	.....	1	.....	8	9	2	.....	9
Totals.....	2,819	596	7,618	7,618	18,651	8,457	314	2,058

Table No. 2.

Meters in Service December 31, 1928.

MAKE.	DIAMETER IN INCHES.											
	$\frac{1}{2}$	$\frac{3}{4}$	1	1 $\frac{1}{2}$	2	3	4	6	8	10	12	Totals.
Hersey disc.....	42,322	3,146	1,401	712	275	96	70	6	.....	.....	.....	48,028
Worth disc.....	8,840	38	12	38	70	59	.....	.....	.....	.....	.....	9,057
Watch dog.....	20,404	665	857	535	307	147	43	.....	.....	.....	.....	22,958
King.....	9,960	375	59	52	46	.....	.....	.....	.....	.....	.....	10,492
Hersey detector.....	.....	.....	.....	.....	.....	5	27	41	14	19	1	107
Hersey rotary.....	355	308	179	149	163	54	23	16	.....	.....	.....	1,247
Crown.....	323	413	167	112	138	38	35	7	.....	.....	.....	1,233
Federal.....	1,244	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,244
American.....	50	446	.....	.....	.....	.....	.....	.....	.....	.....	.....	496
Lambert.....	239	87	73	17	15	.....	4	.....	.....	.....	.....	435
Nash.....	302	16	81	9	2	2	.....	.....	.....	.....	.....	412
Keystone.....	159	168	22	1	1	6	.....	.....	.....	.....	.....	357
Trident.....	159	2	4	4	4	14	5	2	.....	.....	.....	194
Empire.....	97	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	97
Old Worthington.....	.....	8	25	1	8	11	1	.....	.....	.....	.....	54
Protectus.....	.....	.....	.....	.....	.....	.....	2	1	2	2	.....	7
Gem.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	1
Standard.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4
Thomson.....	6	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	8
Hersey compound.....	.....	.....	.....	.....	.....	.....	8	12	.....	.....	.....	20
Metropolitan.....	.....	12	1	.....	.....	.....	.....	.....	.....	.....	.....	13
Totals.....	84,464	5,686	2,881	1,630	1,030	432	218	85	16	21	1	96,464

Table No. 1.
Showing Length of Water Pipes and Connections Owned and Operated by the Public Works Department, Water Division (Water Service) and Number of Valves in same December 31, 1928.

	DIAMETER OF PIPES IN INCHES.																Totals.
	48	42	40	36	30	24	20	16	14	12	10	8	6	4	3	2	
Length owned and operated December 31, 1927.	20,073	15,980	16,081	43,780	90,399	84,436	86,741	290,796	5,041	1,629,494	446,390	984,880	1,123,726	83,336	9,442	6,669	4,937,264
Gate valves in same.	17	4	9	20	56	78	73	670	19	4,327	1,498	3,394	3,571	567	16	17	14,336
Air valves in same.	33	5	9	34	107	78	42	75		49		3			1		438
Blow-offs in same.	5	4	3	11	33	30	46	67		162	42	127	131	58	7	2	728
Length laid and relaid during 1928.	527				291	217	100	6,700		14,735	692	37,926	790	173			62,151
Gate valves in same.						2		11		73	4	156	5	3			254
Air valves in same.	2				2	1		3		1							9
Blow-offs in same.								3		4	1	20	2	1			31
Length abandoned during 1928.					147	10	308	1,974		3,975	462	1,235	9,083	461			17,655
Gate valves in same.								1		11	4	9	19	3			47
Blow-offs in same.										3		7	1				11
Air valves in same.							1			1							2
Length owned and operated December 31, 1928.	20,600	15,980	16,081	43,780	90,543	84,643	86,533	295,522	5,041	1,640,254	446,620	1,021,571	1,115,433	83,048	9,442	6,669	4,981,760
Gate valves in same.	17	4	9	20	56	80	73	680	19	4,389	1,498	3,541	3,557	567	16	17	14,543
Air valves in same.	35	5	9	34	109	79	41	78		49		3	1		1		445
Blow-offs in same.	5	4	3	11	33	30	46	70		163	43	140	132	59	7	2	748

943.51 miles in system.

Table No. 2.

Total Number of Hydrants in System December 31, 1928.

	Lowry.	Boston Lowry.	Boston Post.	Ordinary Post.	Bachelor and Finneran Post.	Ludlow Post.	Chapman Post.	Coffin Post.	Matthews Post.	Boston.	Totals.
City proper (public).....	457	36	483	251	234	.....	.....	.....	.....	52	1,513
" (private).....	5	.....	9	6	2	.....	.....	.....	.....	39	61
Roxbury (public).....	221	48	409	320	519	.....	.....	.....	.....	13	1,530
" (private).....	2	1	3	4	.....	.....	.....	.....	.....	10	20
West Roxbury (public).....	20	148	482	1,018	373	.....	.....	.....	.....	13	2,054
" (private).....	.....	.....	.....	15	1	.....	.....	.....	.....	1	17
Brighton (public).....	18	39	268	523	159	.....	.....	.....	.....	11	1,018
" (private).....	.....	.....	.....	8	.....	.....	.....	.....	.....	2	10
Dorchester (public).....	171	116	664	1,152	362	.....	.....	.....	.....	16	2,481
" (private).....	.....	1	8	.....	2	.....	.....	.....	.....	4	15
South Boston (public).....	104	19	241	187	98	.....	.....	.....	.....	14	663
" (private).....	3	1	.....	15	.....	.....	.....	.....	.....	27	46
East Boston (public).....	25	15	203	224	66	.....	.....	.....	.....	5	538
" (private).....	8	1	.....	9	.....	.....	.....	.....	.....	25	43
Charlestown (public).....	73	34	139	59	40	.....	.....	.....	.....	2	347
" (private).....	13	1	.....	37	.....	.....	.....	.....	.....	5	56
Hyde Park (public).....	.....	.....	14	336	104	7	111	1	.....	.....	573
" (private).....	.....	.....	.....	.....	.....	13	55	.....	4	.....	72
Deer Island (private).....	.....	.....	1	19	.....	.....	.....	.....	.....	.....	20
Long Island (private).....	.....	.....	.....	6	.....	.....	.....	.....	.....	.....	6
Thompson's Island (private)....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	2
Gallup's Island (private).....	.....	.....	.....	3	.....	.....	.....	.....	.....	1	4
Rainsford Island (private).....	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	3
Quincy.....	.....	.....	.....	9	.....	.....	.....	.....	.....	.....	9
Total number (public).....	1,089	455	2,903	4,070	1,955	7	111	1	.....	126	10,717
Total number (private and suburban).....	31	5	21	136	5	13	55	.....	4	114	384

*Total Number and Aggregate Length of Service Pipes of Various Sizes
Connected with System December 31, 1928.*

SIZE.	Total Number.	Aggregate Length in Linear Feet.
$\frac{1}{2}$ -inch.....	6,897	158,251
$\frac{3}{4}$ -inch.....	93,728	2,573,606
$\frac{1}{2}$ -inch.....	3,597	124,095
1-inch.....	5,779	205,313
1 $\frac{1}{4}$ -inch.....	645	18,502
1 $\frac{1}{2}$ -inch.....	1,897	55,923
2-inch.....	2,403	72,326
2 $\frac{1}{2}$ -inch.....	12	267
3-inch.....	1,070	29,500
4-inch.....	3,731	93,184
6-inch.....	238	24,500
8-inch.....	74	4,660
10-inch.....	15	1,814
12-inch.....	21	4,010
16-inch.....	5	448
Totals.....	* 120,112	3,366,399

* The completion of the metering of all services to within $\frac{1}{2}$ per cent of the total number of live service pipes discloses the fact that the total number of service pipes will not exceed 97,000. The large discrepancy is found to be due to the fact that previous to 1880 no deductions were made for pipes abandoned, etc.

Cost of Extension of Main Pipe.

STREET.	Location.	District.	Size. (Inch.)	Feet.	Cost of Depart- ment Materials, etc.	Cost of Labor.	Cost of Inspection.	Total Cost.	Remarks.
Monroe road.....	From Washington street.....	Brighton.	6	305	\$625 29	\$503 97	\$44 73	\$1,173 99	Private, clay and rock.
Murray terrace.....	From Brooks street.....	Dorchester.	6	207	207 61	230 70	10 07	508 38	Private, filled.
Springvale avenue.....	From Spring street.....	West Roxbury.	6	36	36 44	63 00	3 20	102 64	Private, sand.
Barlow street.....	From Wachuset street.....	West Roxbury.	6	213	217 73	227 44	13 42	458 59	Private, clay.
	Totals.....	.....	.....	761	\$1,147 07	\$1,025 11	\$71 42	\$2,243 60	
Hatherley road.....	Between Chestnut Hill avenue and Portina road.	Brighton.	8	654	\$1,089 87	\$703 55	\$46 33	\$1,839 75	Private, clay and filled.
Portina road.....	From Colwell road.....	Brighton.	8	236	316 54	623 98	13 58	954 10	Private, filled land.
Rose Garden circle.....	From Foster street.....	Brighton.	8	283	468 78	442 19	44 73	955 70	Private, clay.
Alberta road.....	From Washington street.....	Brighton.	8	310	586 14	451 90	40 26	1,078 30	Private, clay.
Langley road.....	Between Breck avenue and Wash- ington street.	Brighton.	8	342	748 95	516 68	30 20	1,295 83	Private, clay.
Madeline street.....	From Harriet street.....	Brighton.	8	201	395 63	249 68	13 42	658 73	Private, gravel.
Madeline street.....	From Faneuil street.....	Brighton.	8	316	461 42	300 02	13 42	835 46	Private, rock.
Dunklee street.....	From Madeline street.....	Brighton.	8	18	31 46	20 90	.....	52 36	Private, clay.
Hollis road.....	At Cambridge street.....	Brighton.	8	52	284 95	70 00	18 21	373 16	Private, gravel.
Emery road.....	At Cambridge street.....	Brighton.	8	52	299 83	67 50	23 52	390 85	Private, gravel.
Goodenough street.....	From Barker street.....	Brighton.	8	206	269 98	271 70	19 73	561 41	Private, gravel.
St. Paul street.....	From Commonwealth avenue.....	Brighton.	8	179	411 91	268 70	14 42	695 03	Private, gravel.
	Carried forward.....	.....	8	2,849	5,365 46	4,047 40	277 82	9,690 68	

Cost of Extension of Main Pipe.—Continued.

STREET.	Location.	District.	Size, (Inch.)	Feet.	Cost of Depart- ment Materials, etc.	Cost of Labor.	Cost of Inspe- ction.	Total Cost.	Remarks.
	<i>Brought forward</i>.....	.....	8	2819	\$5,365 46	\$4,047 40	\$277 82	\$9,690 68	
Chiswick Road West.....	From Chestnut Hill avenue.....	Brighton.	8	647	1,027 94	1,126 52	78 00	2,232 46	Private, clay and rock.
Cresthill road (south side)...	From Parsons street.....	Brighton.	8	473					
Cresthill road (west side)...	Between north and south sides....	Brighton.	8	223	2,097 71	1,202 70	56 20	3,356 61	Private, clay.
Cresthill road.....	North side from Parsons street....	Brighton.	8	437					
Strathmore road.....	Between Sutherland and Chiswick roads.	Brighton.	{ 6 10 8 267 }		418 46	691 92	55 11	1,165 49	Public, clay and rock.
Ruth road.....	From Faneuil street.....	Brighton.	8	196	295 90	164 49	20 97	481 36	Private, clay.
Kingsley street.....	Between North Harvard and Hub- bard streets.	Brighton.	8	86	96 40	174 00	15 94	286 34	Private, gravel.
Knapp street.....	Between Kneeland and Beach streets.	City Proper.	8	19	44 74	225 00	4 32	274 06	Private, under construction.
Knapp street.....	From Kneeland street.....	City Proper.	{ 6 14 8 66 }		286 19	273 98	.....	560 17	Private, under construction.
Main street.....	At Sullivan square.....	Charlestown.	8	12	139 74	32 25	.....	171 99	Public, granite block and con- crete base.
Southern Artery.....	Between Dorchester avenue and Alicia street.	Dorchester.	8	509	656 22	505 12	54 32	1,215 66	Public, clay.
Madison avenue.....	From Willowwood street.....	Dorchester.	8	260	419 92	382 52	39 94	842 38	Private, clay and rock.
Westmoreland street.....	Between Adams and Fairfax streets,	Dorchester.	8	401	621 52	447 10	47 93	1,116 55	Public and private, macadam and gravel.
Jacobs street.....	Between Jones and Ballou avenues,	Dorchester.	8	605	756 60	638 52	10 62	1,405 74	Private, ash-filled.
Emerson avenue.....	Between Southern Artery and Mor- ton street.	Dorchester.	8	337	579 85	1,340 68	14 06	1,934 59	Private, clay and rock.

Allendale street.....	From Southern Artery.....	Dorchester.	8	144	174 16	262 58	16 97	453 71	Private, gravel.
Tennis road.....	From Dyer avenue.....	Dorchester.	8	183	328 82	222 34	12 14	563 30	Private, rock and hard pan.
Auckland street.....	Between Bay and Dewar streets.....	Dorchester.	8	208	305 61	358 40	28 51	692 52	Public, under construction.
Southview street.....	From Savin Hill avenue.....	Dorchester.	8	389	761 83	691 25	38 01	1,491 09	Private, gravel.
Ridge road.....	At Cummins Highway.....	Dorchester.	8	60	126 71	144 11	4 79	275 61	Private, hard pan.
Randolph road.....	At Cummins Highway.....	Dorchester.	8	134	209 26	321 60	9 23	540 09	Private, gravel and rock.
Oldfields street.....	From Columbia road.....	Dorchester.	8	328	597 27	582 49	50 23	1,229 99	Private, clay and rock.
Carlotta street.....	From Centre street.....	Dorchester.	8	221	527 27	393 74	10 79	931 80	Private, gravel.
Humes road.....	Between Ashmont and Newhall streets.	Dorchester.	8	237	328 85	422 28	12 22	763 35	Private, clay.
Livernore street.....	At Cummins Highway.....	Dorchester.	8	22	134 32	60 00	2 52	196 84	Private, clay.
Avondale street.....	From St. Gregory's court.....	Dorchester.	8	381	856 17	522 20	25 56	1,403 93	Private, gravel.
St. Gregory's court.....	From Avondale street.....	Dorchester.	8	3					
Hildreth street.....	From Wildwood street.....	Dorchester.	8	387	666 37	458 02	31 95	1,156 34	Private, clay.
Laban Pratt road.....	From Boutwell street.....	Dorchester.	8	180	270 67	365 50	5 04	641 21	Private, gravel and sand.
Columbine street.....	Between Blue Hill avenue and Ashton street.	Dorchester.	8	146	142 38	232 70	40 26	415 34	Private, clay.
Ashton street.....	Between Woodrow avenue and Columbine street.	Dorchester.	8	254	587 24	442 70	20 13	1,050 07	Private, clay.
Parkman street.....	From Neponset street.....	Dorchester.	8	81	361 29	134 80	28 75	521 84	Private, gravel.
Proposed street.....	Off Morton street (north side), near Emerson avenue.	Dorchester.	8	19	94 77	19 95	2 52	117 24	Private, clay.
Emerson avenue.....	From Morton street.....	Dorchester.	8	19	94 77	19 95	2 52	117 24	Private, clay.
Branton street.....	Between Minot street and Southern Artery.	Dorchester.	8	384	511 86	363 50	11 50	886 86	Private, clay filled.
<i>Carried forward.....</i>			{ 6	24	\$19,885 27	\$17,270 31	\$1,028 87	\$38,185 45	
			{ 8	11,190					

Cost of Extension of Main Pipe.—Continued.

STREET.	Location.	District.	Size. (Inch.)	Feet.	Cost of Depart- ment Materials, etc.	Cost of Labor.	Cost of Inspection.	Total Cost.	Remarks.
Proposed street.....	<i>Brought forward</i>.....	.....	{ 6 24 8 11,196 }	.....	\$19,886 27	\$17,270 31	\$1,028 87	\$38,185 45	
Pasadena road.....	Opposite Oakridge street (south side).	Dorchester.	8	19	100 89	19 95	.....	120 84	Private, clay.
Proposed street.....	Between Blue Hill avenue and Nor- mandy street.	Dorchester.	8	386	817 83	1,140 10	48 16	2,006 09	Private, gravel and rock.
Druid street.....	Opposite Druid street.....	Dorchester.	8	20	103 19	21 00	.....	124 19	Private, clay and rock.
Morton street, extension..	From Morton street.....	Dorchester.	8	19	96 02	19 95	1 68	117 65	Private, clay and rock.
Laban Pratt road.....	Between Washington and Druid streets.	Dorchester.	8	1,611	3,180 82	4,745 60	270 08	8,196 50	Public, under construction.
Arbroth street.....	Between Fairview and Boutwell streets.	Dorchester.	8	261	576 77	300 00	20 13	896 90	Private, sand and gravel.
Brook street.....	Between Train street and Laban Pratt road.	Dorchester.	8	446	807 92	465 50	20 13	1,293 55	Private, clay.
Hutchinson street.....	At Hutchinson street.....	Dorchester.	8	28	102 94	28 00	3 36	134 30	Private, gravel.
Owencroft street.....	At Brook street.....	Dorchester.	8	167	393 19	208 00	11 74	612 93	Private, gravel.
Hurlcroft street.....	From Hurlcroft street.....	Dorchester.	8	22	568 46	355 09	28 83	952 38	Private, clay.
Columbia park.....	Between Owencroft and Washing- ton streets.	Dorchester.	8	306	.....	.....	.....	.....	.....
Donald road.....	Between Lawrence avenue and In- tervale street.	Dorchester.	8	126	139 06	441 20	23 49	603 75	Private, gravel and rock.
Whitby street.....	From Blue Hill avenue.....	Dorchester.	8	162	176 46	275 40	31 65	483 81	Private, clay.
	From Ashley street.....	East Boston.	8	67	100 56	90 45	3 36	194 37	Private, clay.

Ashley street.....	Between Whitby and Boardman street.	East Boston.	8	741	1,353 25	1,118 00	53 68	2,524 93	Public, clay.
Greenwood circle.....	From Greenwood avenue.....	Hyde Park.	8	268	503 93	621 74	57 04	1,182 71	Private, gravel and rock.
Rock road.....	From Randolph road.....	Hyde Park.	8	61	169 39	130 75	22 37	322 51	Private, gravel and rock.
Hebron street.....	South side, from Cummins Highway,	Hyde Park.	8	71	201 84	192 07	6 71	400 62	Private, rock.
Dedham street.....	From Glenwood avenue.....	Hyde Park.	8	203	371 81	420 32	20 49	812 62	Private, rock and clay.
Hollingsworth street.....	Between Randolph road and Caton street.	Hyde Park.	8	32	200 73	171 45	13 42	385 60	Public, clay.
Orchard street.....	From Rutledge road.....	Hyde Park.	8	118	351 09	186 30	6 71	544 10	Private, clay and ledge.
Woodland road.....	Between Tileston and Rutledge roads.	Hyde Park.	8	51	62 84	138 64	13 66	215 14	Private, rock.
Blanchard street.....	From Morton street.....	Hyde Park.	8	150	302 26	318 00	12 14	632 40	Private, gravel.
Oakwood street.....	From Wood avenue.....	Hyde Park.	8	24	105 30	22 10	6 39	133 79	Private, clay.
Eliot street.....	From Wood avenue.....	Hyde Park.	8	230	498 01	298 77	22 37	819 15	Private, clay.
Edward street.....	From Wood avenue.....	Hyde Park.	8	240	387 77	262 00	12 78	662 55	Private, clay.
Brunswick street.....	From Warren street.....	Roxbury.	8	297	610 68	527 27	28 75	1,166 70	Private, gravel.
Logan street.....	Between Thornton and Lambert streets.	Roxbury.	8	337	585 57	909 90	95 85	1,591 32	Public, rock.
Charme avenue.....	From Neponset avenue.....	West Roxbury.	8	282	567 68	261 90	41 54	871 12	Private, clay and fill.
Rumford road.....	At Cheswick road.....	West Roxbury.	8	102	161 92	153 00	11 50	326 42	Private, clay.
Keystone street.....	From North avenue.....	West Roxbury.	8	12	34 32	37 50	6 39	78 21	Private, gravel and sand.
Ashland avenue.....	Between Summer and Cass streets,	West Roxbury.	8	144	225 83	956 73	44 73	1,227 29	Private, rock.
Cross road.....	Between Bungalow and Overlook roads.	West Roxbury.	8	252	421 57	1,099 00	178 25	1,698 82	Private, rock.
High road.....	At Cross road.....	West Roxbury.	8	3					
<i>Carried forward.....</i>			{ 6 24 } 8 18,448		\$34,166 17	\$33,205 99	\$2,146 55	\$69,518 71	

Cost of Extension of Main Pipe.—Continued.

STREET.	Location.	District.	Feet. Size. (Inch.)	Cost of Depart- ment Materials, etc.	Cost of Labor.	Cost of Inspection.	Total Cost.	Remarks.
	<i>Brought forward</i>		{ 6 24 8 18,448 }	\$34,166 17	\$33,205 99	\$2,146 55	\$69,518 71	
Overlook road.....	At Cross road.....	West Roxbury.	8	223 42	527 54	80 50	831 46	Private, rock.
Mahler street.....	Between Washington street and railroad.	West Roxbury.	8	356 50	234 90	24 28	615 68	Private, filled.
Elwell road.....	From Allandale street.....	West Roxbury.	8	600 08	311 40	44 73	956 21	Private, clay.
Bellevue terrace.....	From Emmons road.....	West Roxbury.	8	112 61	29 00	3 04	144 65	Private, wet clay.
Emmons road.....	From Howitt road.....	West Roxbury.	8	350 83	248 94	15 18	614 95	Private, wet clay.
Thurlow street.....	From La Grange street.....	West Roxbury.	8	423 58	239 49	9 11	672 18	Private, sandy fill.
Swan street.....	From La Grange street.....	West Roxbury.	8	390 12	228 00	9 11	627 23	Private, filled land.
Alpheus road.....	From Beech street.....	West Roxbury.	8	95 52	102 00	3 04	200 56	Private, clay.
Cedar street.....	East from Washington street.....	West Roxbury	8	350 44	228 52	6 07	585 03	Private, clay.
Stedman street.....	Between Williams street and Rosemore road.	West Roxbury.	8	252 24	154 00	6 07	412 31	Private, sand.
Clarendon avenue.....	Between Poplar and Hillburn streets.	West Roxbury.	8	768 53	642 70	31 87	1,443 10	Private, clay.
Lindall street.....	At Cummins Highway.....	West Roxbury.	8	128 26	82 82	2 40	213 48	Public, under construction.
Beecher street.....	Between Boylston and Paul Gore streets.	West Roxbury.	8	450 13	456 20	33 94	940 27	Private, gravel and rock.
Caledonian avenue.....	From Prospect street.....	West Roxbury.	8	56 36	64 50	3 04	123 90	Private, gravel.
Freeman avenue.....	Between Washington and Grove streets.	West Roxbury.	8	470 30	1,102 42	41 73	1,614 45	Private, rock.

Bates street.....	Between Jeffers street and Alpheus road.	West Roxbury.	8	593	911 67	834 23	46 97	1,792 87	Private, clay.
Porter terrace.....	From Mt. Vernon street.....	West Roxbury.	8	276	570 77	405 10	26 84	1,002 71	Private, clay.
Cushing street.....	From Baker street.....	West Roxbury.	8	196	344 12	258 75	42 49	645 36	Private, gravel.
Oak avenue.....	From Earnshaw street.....	West Roxbury.	9	92	159 66	215 84	18 21	393 71	Private, clay and rock.
Overlook road.....	Between Cross and Grove roads.....	West Roxbury.	8	324	539 18	903 84	125 61	1,568 63	Private, rock.
Grove road.....	From Overlook road.....	West Roxbury.	8	3					
Potomac street.....	East from Yorktown street.....	West Roxbury.	8	484	730 68	481 50	40 97	1,253 15	Private, clay.
Earnshaw street.....	From Oak avenue.....	West Roxbury.	8	125	308 20	422 27	49 32	779 79	Private, rock.
Guernsey street.....	Between Centre and South streets.	West Roxbury.	8	117	273 84	133 99	12 76	420 59	Private, gravel and clay.
Furnival road.....	From Pond street.....	West Roxbury.	8	180	446 71	310 70	57 51	814 92	Private, clay.
Quarley road.....	From Grover street.....	West Roxbury.	8	227	311 07	254 10	16 78	581 95	Private, gravel.
Pittsmore road.....	From Grover street.....	West Roxbury.	8	211	428 42	258 30	24 32	711 04	Private, gravel.
Arborway terrace.....	From Centre street.....	West Roxbury.	8	246	344 01	275 00	16 78	635 79	Private, gravel.
James street.....	From Cummins Highway.....	West Roxbury.	8	58	119 11	139 20	4 19	262 50	Private, gravel.
Summer street.....	At Powell road.....	West Roxbury.	8	27	91 24	44 00	1 68	136 92	Public, clay.
Powell street.....	Between Cass and Summer streets..	West Roxbury.	8	287	538 21	409 30	24 32	971 83	Public, clay.
Forest Hills circle.....	From Forest Hills street.....	West Roxbury.	8	510	815 26	938 88	37 74	1,791 88	Private, clay and rock.
Buchanan road.....	From Centre street.....	West Roxbury.	8	366	595 33	464 49	25 16	1,084 98	Private, clay.
Bremar terrace.....	From Orchard avenue.....	West Roxbury.	8	180	249 98	457 06	23 52	730 56	Private, clay and rock.
Charline avenue.....	From Neponset avenue.....	West Roxbury.	8	123	282 02	186 80	6 71	475 53	Private, gravel.
Atlantis street.....	From Brook Farm road.....	West Roxbury.	8	296	534 79	451 60	46 97	1,033 36	Private, clay.
Bogandale road.....	From Centre street.....	West Roxbury.	8	790	1,292 29	1,733 10	40 26	3,065 65	Private, clay and rock.
<i>Carried forward.....</i>			{	6	24	\$49,081 65	\$3,149 77	\$99,667 89	
			{	8	26,919				

Cost of Extension of Main Pipe.—Continued.

STREET.	Location.	District.	Size. (Inch.)	Feet.	Cost of Depart- ment Materials, etc.	Cost of Labor.	Cost of Inspection.	Total Cost.	Remarks.
	<i>Brought forward.</i>		{ 6 24 8 26,919 }		\$49,081 65	\$47,436 47	\$3,149 77	\$99,667 89	
Hodgdon terrace.....	From Midvale street.....	West Roxbury.	8	117	129 72	532 40	20 13	682 25	Private, clay.
Parkvale road.....	From Weld street.....	West Roxbury.	8	205	269 03	225 44	24 28	518 75	Private, gravel.
Hennan street.....	Between Kittredge and Summit streets.	West Roxbury.	8	680	834 60	712 00	64 58	1,611 18	Private clay.
Keith street.....	From Perham street.....	West Roxbury.	8	200	402 13	213 64	21 25	637 02	Private, clay.
Lee street.....	Between Child street and Carolina avenue.	West Roxbury.	8	44	168 53	142 02	22 65	333 20	Private, rock.
Winslow street.....	From La Grange street.....	West Roxbury.	8	292	522 09	289 40	24 28	835 77	Private, filled land.
Rocky Nook terrace.....	From Glen road.....	West Roxbury.	8	256	624 44	286 75	38 34	949 53	Private, clay.
Jeannett street.....	Between La Grange and Potomac streets.	West Roxbury.	8	251					
Potomac street.....	At Jeannett street.....	West Roxbury.	8	14	541 64	293 96	33 39	868 99	Private, clay.
Reyem circle.....	From Washington street.....	West Roxbury.	8	597	1,185 60	756 82	10 07	1,952 49	Private, clay and rock.
Brookside avenue.....	South side from Union avenue.....	West Roxbury.	8	242	585 45	255 96	19 17	860 58	Private, filled land.
Meshaka street.....	From Washington street.....	West Roxbury.	8	272	620 07	290 32	26 36	936 75	Private, gravel and sand.
Alder street.....	Between Vermont and Keith streets,	West Roxbury.	8	307	569 24	330 78	30 35	930 37	Private, clay.
Dent street.....	From Lasell street.....	West Roxbury.	8	204	322 83	305 95	16 77	645 55	Private, clay.
Furnival road.....	From Pond street.....	West Roxbury.	8	72	79 03	155 00	24 32	258 36	Private, clay filled.
Eastwood circuit.....	From Prospect street.....	West Roxbury.	8	143	202 24	137 52	15 94	355 70	Private, gravel.

Martin street.....	From Bellevue street.....	West Roxbury.	8	193	258 68	225 89	22 63	507 20	Private, clay and rock.
	Totals.....		{ 6 24 8 31,008 }		\$56,396 98	\$52,590 32	\$3,564 28	\$112,551 58	
Dewar street.....	At Aukland street.....	Dorchester.	10	29	67 39	50 75	5 43	123 57	Public, under construction.
Greenfield street.....	From Royal road.....	Dorchester.	10	122	231 04	171 00	6 71	408 75	Public, loaming clay.
	Totals.....		10	151	\$298 43	\$221 75	\$12 14	\$532 32	
Colwell avenue.....	From Chestnut Hill avenue.....	Brighton.	12	763	\$2,023 57	\$882 64	\$46 33	\$2,952 54	Private, clay.
Summit avenue.....	Between Corey road and Brookline line.	Brighton.	12	129	437 44	185 50	18 21	641 15	Public, clay.
Corey road.....	Between Summit avenue and Brookline line.	Brighton.	12	104	215 52	107 00	12 14	334 66	Private, clay.
Hobart street.....	At Oakland street.....	Brighton.	12	94	303 35	126 58	5 85	435 78	Private, clay.
Electric avenue.....	Between Parsons and North Beacon streets.	Brighton.	12	185	396 62	378 00	20 97	795 59	Private, clay and sand.
Southern Artery.....	Between Hallet street and Neponset avenue.	Dorchester.	12	390	838 19	589 50	30 55	1,458 24	Public, gravel.
Mt. Vernon street.....	At Old Colony avenue.....	Dorchester.	12	1	38 09	49 89	.....	87 98	Public, clay.
Richmond road.....	At Cummins Highway.....	Dorchester.	12	56	129 45	147 60	13 42	290 47	Public, clay and rock.
Favre street.....	At Cummins Highway.....	Dorchester.	12	56	236 40	144 00	9 23	389 63	Private, clay
St. Gregory's court.....	Between Washington street and Dorchester avenue.	Dorchester.	12	535	1,580 98	831 54	50 32	2,462 84	Private, rock and clay.
Favre street.....	Between Cummins Highway and Messinger street.	Dorchester.	12	812	1,832 72	1,077 50	26 84	2,937 06	Private clay.
Manchester street.....	Across Morton street.....	Dorchester.	12	93	463 77	111 28	8 39	583 44	Private, clay.
Allandale avenue.....	Between Southern Artery and Milton avenue.	Dorchester.	12	147	471 46	201 05	8 63	681 14	Private clay.
	Carried forward.....		12	3,365	\$8,967 56	\$4,832 08	\$250 88	\$14,050 52	

Cost of Extension of Main Pipe.—Concluded.

STREET.	Location.	District.	Size. (Inch.)	Feet.	Cost of Depart- ment Materials, etc.	Cost of Labor.	Cost of Inspection.	Total Cost.	Remarks.
	<i>Brought forward</i>		12	3,365	\$8,967 56	\$4,832 08	\$250 88	\$14,050 52	
Woodfield street.....	Between Minot street and Southern Artery.	Dorchester.	12	305	931 16	498 62	20 13	1,440 91	Private, clay filled.
Southern Artery.....	Between Woodfield and Branton streets.	Dorchester.	12	384	719 35	529 00	17 25	1,265 60	Public, gravel.
Mt. Vernon street.....	East from Old Colony avenue.....	Dorchester.	12	144	562 95	240 84	19 41	823 20	Public, gravel.
Olney street.....	Between Geneva avenue and Rosseter street.	Dorchester.	12	234	774 09	980 25	33 07	1,787 41	Public, rock.
Magnolia street.....	Between Lawrence avenue and Intervale street.	Dorchester.	12	60	124 56	159 00	5 75	280 31	Public, rock.
Magnolia street.....	From Intervale street.....	Dorchester.	12	138	354 93	397 10	31 87	783 90	Private, gravel and rock.
Wood avenue.....	Between Rutledge and Thatcher streets.	Hyde Park.	12	231	585 65	317 42	31 95	935 02	Private, clay and rock.
Thatcher street.....	From Wood avenue.....	Hyde Park.	12	390	1,035 44	490 82	51 12	1,577 38	Private, clay and rock.
Vila street.....	From Longwood avenue.....	Roxbury.	12	690	1,603 01	862 50	52 47	2,517 98	Private, gravel.
Holworthy street.....	Between Harold street and Humboldt avenue.	Roxbury.	12	300	814 17	884 00	135 04	1,833 21	Public, rock.
Cheswick road.....	From Rumford road.....	West Roxbury.	12	122	393 48	207 00	28 75	629 23	Private, clay.
Eerndale street.....	From Washington street.....	West Roxbury.	12	206	600 89	269 50	24 28	894 67	Private, filled land.
West Roxbury Parkway..	Between Church street and Parkvale road.	West Roxbury.	12	632	1,625 43	1,082 23	143 29	2,850 95	Public lands, clay.
Beech street.....	Between Poplar and Ashville streets.	West Roxbury.	12	670	1,715 38	744 02	33 39	2,492 79	Private, clay.

Whipple avenue.....	From Washington street.....	West Roxbury.	12	349	872 05	375 26	27 32	1,274 63	Private, filled land.
Hyde Park avenue.....	South side from Ashmore road....	West Roxbury.	12	538	1,588 47	689 64	51 12	2,329 23	Public, macadam.
Orchard avenue.....	From Morton street.....	West Roxbury.	{ 12 8	{ 249 62	825 58	601 82	48 56	1,475 96	Private, clay and rock.
	Totals.....		{ 8 12	{ 62 9,097	\$24,094 15	\$14,161 10	\$1,005 65	\$39,260 90	
Harrison avenue.....	Between Randolph and East Concord streets.	City Proper.	{ 12 16	{ 29 2,730	\$9,625 29	\$6,039 09	\$478 24	\$16,142 62	Public, bitulthic and granite block.
Southern Artery.....	West from Oakridge street.....	Dorchester.	16	45	148 28	133 40	6 07	287 75	Public, clay.
Cummins Highway.....	Between Harvard and Sutton streets.	Dorchester.	16	665	2,575 07	1,498 88	134 20	4,208 15	Public, clay and rock.
	Totals.....		{ 12 16	{ 29 3,440	\$12,348 64	\$7,671 37	\$618 51	\$20,638 52	
Tremont street.....	At Arlington street.....	City Proper.	{ 12 16 48	{ 20 10 527					Public, asphalt.
			{ 30	{ 144					Public, asphalt.
Tremont street.....	At Paul street.....	City Proper.	12	25	\$8,627 36	\$47,854 09	\$4,390 77	\$60,872 22	Public, asphalt.
Tremont street.....	At Chandler street.....	City Proper.	12	115					Public asphalt, relay.
Arlington street.....	At Fayette street.....	City Proper.	10	180					Public, asphalt relay.
	Totals.....		{ 10 12 30 48	{ 180 160 10 144 527	\$8,627 36	\$47,854 09	\$4,390 77	\$60,872 22	

Cost of Replacement of Main Pipe.

STREET.	Location.	District.	Size (Inch.)	Feet.	Cost of Department Materials, etc.	Cost of Labor.	Cost of Inspection.	Total Cost.	Original Size (Inch.)	Remarks.
Chestnut terrace.....	From Lamartine street.....	West Roxbury.	4	173	\$204 15	\$300 17	\$25 16	\$529 48	$\left\{ \frac{5}{6} + \frac{1}{1} \right\}$	Private, clay and rock.
Seattle street.....	At Cambridge street.....	Brighton.	$\left\{ \begin{array}{l} 6 \\ 8 \end{array} \right.$	$\left\{ \begin{array}{l} 5 \\ 61 \end{array} \right.$	\$104 67	\$108 27	\$18 97	\$231 91	6	Public, gravel.
Brighton avenue.....	At No. 89.....	Brighton.	8	7	174 13	100 00	10 07	284 20	8	Public, bitulithic.
Parsons street.....	Line of Harriet street.....	Brighton.	8	8	61 34	8 80	1 68	71 82	8	Public, macadam.
Harriet street.....	Between Parsons street and Dunklee street.	Brighton.	8	518	798 12	642 56	28 52	1,469 20	6	Public, under construction.
Sorrento street.....	At Cambridge street.....	Brighton.	8	51	88 59	78 69	17 45	184 73	6	Public, gravel.
Mansfield street.....	At Cambridge street.....	Brighton.	8	64	74 05	87 72	14 42	176 19	6	Public, gravel.
Salutation street.....	At Hanover street.....	City Proper.	8	45	102 01	86 13	5 03	193 17	6	Public, under construction.
Battery street.....	At Hanover street.....	City Proper.	8	46	101 80	93 73	11 74	207 27	6	Public, under construction.
Hudson street.....	Between Beach and Curve streets...	City Proper.	8	1,450	4,461 11	2,633 61	272 22	7,306 94	6	Public, asphalt
Otis place.....	Between Brimmer and Mt. Vernon streets.	City Proper.	8	91	237 86	220 19	51 12	509 17	4	Public, macadam.
Tampa street.....	At Cummins Highway.....	Dorchester.	8	71	101 36	170 40	13 42	285 18	8	Public, clay.
Seminole street.....	At Cummins Highway.....	Dorchester.	8	67	37 85	28 80	4 19	70 84	8	Public, clay.
Avondale street.....	From St. Gregory's street.....	Dorchester.	8	166	155 44	195 85	6 39	357 68	6	Public, clay and rock.
Everett street.....	Between Mill and Park streets.....	Dorchester.	8	375	724 77	479 09	14 38	1,218 24	6	Public, macadam.
Elm street.....	At Everett street.....	Dorchester.	8	29	491 20	160 00	7 19	658 39	6	Public, macadam.

Mill street.....	Between Freeport street and Victory road.	Dorchester.	8	1,690	3,113 75	2,139 26	80 50	5,333 51	6	Public macadam.
Green Hill street.....	At Mill street.....	Dorchester.	8	17						
Ashland street.....	Between Park and Everdeum streets.	Dorchester.	8	1,117	1,830 91	1,378 70	40 97	3,250 67	6	Public, macadam.
Oakridge street.....	At Morton street.....	Dorchester.	8	31	82 51	35 21	4 19	121 91	8	Public, clay.
Alaska street.....	Between Blue Hill avenue and Perrin street.	Roxbury.	8	210	299 18	603 00	53 68	955 86	4	Public, macadam.
Logan street.....	Between Thornton and Lambert streets.	Roxbury.	8	147	231 29	418 83	51 12	701 15	6	Public, rock.
Sheldon street.....	At Cummins Highway.....	West Roxbury.	8	46	186 27	151 60	6 39	344 26	6	Public, under construction.
Sycamore street.....	At Cummins Highway.....	West Roxbury.	8	64	107 12	158 80	.....	265 92	8	Private, clay.
Emmons road.....	From Howitt road.....	West Roxbury.	8	180	221 43	152 69	6 07	380 19	6	Private, clay and rock.
Gleuvale terrace.....	At Lamartine street.....	West Roxbury.	8	233	628 42	407 98	33 55	1,069 95	4	Private, clay and rock.
Oak avenue.....	From Earnshaw street.....	West Roxbury.	8	16	.....	16 90	6 07	22 97	6	Private, gravel and rock.
	Totals.....	.....	6 8	5 6,770	\$14,415 09	\$10,556 90	\$759 33	\$25,731 32		
Whitten street.....	At Adams street.....	Dorchester.	10	3	\$28 97	\$3 15	\$6 07	\$38 19	10	Private, gravel.
Savannah avenue.....	At Cummins Highway.....	Dorchester.	10	60	39 16	144 00	3 20	186 36	10	Private, clay.
Weybosset street.....	At Cummins Highway.....	Dorchester.	10	76	53 53	184 97	5 03	243 53	10	Private, clay.
Medway street.....	Cross bridge.....	Dorchester.	10	80	135 14	27 50	.....	162 64	10	Public, highway.
Kennebee street.....	At Cummins Highway.....	Hyde Park.	10	48	59 67	121 20	6 71	187 58	10	Private, clay.
Sherwood street.....	At Cummins Highway.....	West Roxbury.	10	52	97 29	124 80	.....	222 09	6	Public, under construction.
	Totals.....	.....	10	319	\$413 76	\$605 62	\$21 01	\$1,040 39		
Oakland avenue.....	From Oakland street.....	Brighton.	12	234	\$724 90	\$394 68	\$24 32	\$1,143 90	6	Private, clay.
Market street.....	At railroad bridge.....	Brighton.	12	98	315 34	428 13	31 87	775 34	12	Public, highway.
	Carried forward.....	.....	12	332	\$1,040 24	\$822 81	\$56 19	\$1,919 24		

Cost of Replacement of Main Pipe.— Concluded.

STREET.	Location.	District.	Size. (Inch.)	Feet.	Cost of Depart- ment Materials, etc.	Cost of Labor.	Cost of Inspec- tion.	Total Cost.	Original Size. (Inch.)	Remarks.
	<i>Brought forward.</i>.....	.....	12	332	\$1,040 24	\$822 81	\$36 19	\$1,919 24		
Stuart street.....	Between Clarendon street and Trinity place.	City Proper.	12	109	72 49	105 13	.....	177 62	12	Public, granite block.
St. Gregory's street.....	Between Washington street and Dorchester avenue.	Dorchester.	12	139	338 48	195 35	13 58	547 41	6	Private, clay and rock.
Morton Street extension..	Between Sanford and Druid streets (south side).	Dorchester.	12	1,005	2,616 41	1,259 06	69 62	3,945 09	12	Public, under construction.
Olney street.....	Between Geneva avenue and Rosseter street.	Dorchester.	12	209	513 83	680 50	23 00	1,217 33	6	Public, rock.
Beech street.....	Between Freeport and Park streets.	Dorchester.	12	829	2,398 72	1,175 12	58 22	3,632 06	6	Public, macadam.
Orleans street.....	South from Porter street.....	East Boston.	12	750	.....	327 50	.....	327 50	12	Private, dirt.
Dudley street.....	At Blue Hill avenue.....	Roxbury.	12	18	219 26	450 00	35 23	704 49	12	Public, asphalt.
Brown avenue.....	At Cummins Highway.....	West Roxbury.	12	15	173 89	69 60	.....	243 49	12	Public, under construction.
Long Island.....	At men's dormitory.....	Harbor.	12	600	1,203 71	5,700 00	.....	6,903 71	6	
	Totals.....	.....	12	4,006	\$8,577 03	\$10,785 07	\$255 84	\$19,617 94		
Hanover street.....	Between Charter street and end of street.	City Proper.	{ 12 365 } 16 404		\$4,438 71	\$1,300 55	\$151 77	\$5,891 03	{ 6 } 12	Public, under construction.
Cummins Highway.....	At Rowe street.....	West Roxbury.	16	4	214 37	69 70	.....	284 07	16	Public, under construction.
Cummins Highway.....	At No. 212.....	West Roxbury.	16	8	178 46	45 60	.....	224 06	16	Public, under construction.

Cummins Highway	At Sherwood street	West Roxbury.	16	7	202 09	76 80	.....	278 89	16	Public, under construction.
Cummins Highway	Opposite No. 77	West Roxbury.	16	16	207 00	98 90	.....	305 90	16	Public, under construction
Cummins Highway	Between Harvard and Sutton streets,	West Roxbury.	16	808	3,111 48	1,962 78	172 78	5,247 04	8	Public, under construction.
	Totals .....	.....	{ 12 16	{ 365 1,307	\$8,352 11	\$3,554 33	\$324 55	\$12,230 99		
	At railroad bridge	City Proper.	{ 20 24	{ 100 211	\$768 58	\$33 64	\$208 01	\$1,010 23	{ 12 20	Public, highway.
	Totals .....	.....	{ 20 24	{ 100 211	\$768 58	\$33 64	\$208 01	\$1,010 23		

Cost of Relocation of Main Pipe.

STREET.	Location.	District.	Size. (Inch.)	Feet.	Cost of Depart- ment, Materials, etc.	Cost of Labor.	Cost of Inspection.	Total Cost.	Original Size. (Inch.)	Remarks.
Beverly street.....	Between Causeway street and Warren Bridge.	City Proper.	8	43	\$296 68	\$129 75	.....	\$426 43	8	Public, granite block.
Hebron street.....	North side of Cummins Highway...	Dorchester.	8	37	51 83	87 60	\$5 03	144 46	8	Private, clay and rock.
Codman street.....	Between Southern Artery and Nevada street.	Dorchester.	8	297	85 38	456 35	40 21	581 94		Public, clay.
	Totals.....		8	377	\$433 89	\$673 70	\$45 24	\$1,152 83		
Greendale road.....	Between Wellington Hill and Courtland streets.	Dorchester.	10	147	\$36 32	\$259 89	\$10 62	\$306 83	10	Public, clay.
Bourne street.....	At No. 50.....	West Roxbury.	10	42	166 58	200 00	28 52	395 10	10	Public, gravel.
	Totals.....		10	189	\$202 90	\$459 89	\$39 14	\$701 93		
Buckingham street.....	Between Dartmouth street and Columbus avenue.	City Proper.	12	457	\$1,325 29	\$958 15	\$87 23	\$2,370 67	12	Public, under construction.
Ashmont street.....	At Peabody square.....	Dorchester.	12	36	.....	.....	.....	.....	12	
Peabody square.....	Across Dorchester Tunnel.....	Dorchester.			184 09	1,375 00	52 72	1,611 81	8	Public macadam.
Peabody square.....	At Ashmont street.....	Dorchester.	8	11						
Dorchester avenue.....	Between Ashmont and Bailey streets,	Dorchester.	{ 12 8 5 }	4					12	Public, bitulithic.
Beale street.....	Between Radford lane and Dorchester avenue.	Dorchester.	12	.....	530 52	1,001 79	52 00	1,584 31	6	Public, macadam.
Radford lane.....	Under Dorchester Tunnel.....	Dorchester.	12	175					6	Public, macadam.

Morton street.....	At Morton Street extension.....	Dorchester.	12	163	264 42	347 00	4 19	615 61	12	Public, under construction.
Ogden street.....	From Fairmount avenue.....	Dorchester.	12	50	82 39	150 00	31 87	264 26	12	Public, clay.
Itasca street.....	At Cummins Highway.....	Hyde Park.	12	104	222 25	259 34	7 55	489 14	12	Private, clay and rock.
Wood avenue.....	At Cummins Highway.....	Hyde Park.	12	76	194 31	192 07	6 71	393 09	12	Public, clay.
Bullock street.....	At D street.....	South Boston.	12	13	91 63	28 63	.....	120 26	12	Public, dirt.
	Totals.....	.....	{ 8 12	16 1,078	\$2,894 90	\$4,311 98	\$242 27	\$7,449 15		
Beverly street.....	At Warren Bridge.....	City Proper	16	103	\$622 25	\$529 78	.....	\$1,152 03	16	Public, granite block.
Cummins Highway.....	Between Harvard and Rugby roads,	Dorchester.	16	1,520	1,540 74	4,776 60	\$293 27	6,610 61	16	Public, under construction.
Cummins Highway.....	Between Washington street and Hyde Park avenue.	West Roxbury.	16	310	355 54	906 92	83 87	1,346 33	16	Public, under construction.
Parker street.....	At Heath street.....	Roxbury.	{ 16 24	10 6	291 74	800 00	53 68	1,145 42	{ 16 24	Public, under construction.
	Totals.....	.....	{ 24 16	6 1,943	\$2,810 27	\$7,013 30	\$430 82	\$10,254 39		
Beverly street.....	At Warren Bridge.....	City Proper.	30	147	\$1,091 84	\$2,029 90	.....	\$3,121 74	30	Public, granite block.

WATERWORKS STATISTICS.—CITY OF BOSTON.

FOR THE FISCAL YEAR ENDING DECEMBER 31, 1928.

DISTRIBUTION.

Mains.

Kind of pipe: Cast iron, wrought iron.

Size: 2-inch to 48-inch.

Extended, miles, 8.57.

Size, enlarged, miles, 1.97.

Total miles now in use, 943.51.

Public hydrants added, 116.

Public hydrants now in use, 10,717.

Stop gates added, 174.

Stop gates now in use, 14,510.

Stop gates smaller than 4-inch, 33.

Number of blowoffs, 748.

Range of pressure on mains, 30 to 90 pounds.

*Service.*Kind of pipe and size: Lead and lead lined, $\frac{1}{2}$ -inch to 2-inch; cast iron, 2-inch to 12-inch; wrought iron and cement lined, $\frac{3}{4}$ -inch to 2-inch;brass and copper, $\frac{3}{8}$ -inch to 2-inch.

Extended, feet, 53,104.

Total miles now in use, 637.5.

Service taps added, 2,463.

Total service taps now in use, 97,000, approximately.

APPENDIX G.

REPORT OF THE BOSTON AND CAMBRIDGE
BRIDGE COMMISSION.

BOSTON, JANUARY 2, 1929.

To the Honorable the Mayor:

SIR,—As Commissioner for the City of Boston, I respectfully submit herewith the annual report of the Boston and Cambridge Bridge Commission for the year ending December 31, 1928.

The commission is composed of two members, one appointed by the Mayor of the City of Boston and the other by the Mayor of the City of Cambridge, under provisions of chapter 467, Acts of 1898.

The commission has charge of the maintenance of the following-named bridges between Boston and Cambridge.

Anderson, Cottage Farm, Longfellow, Prison Point, River street and Western avenue to Cambridge. Cottage Farm Bridge was returned to the control of the commission on November 17, 1928, after being rebuilt by the Metropolitan District Commission.

As there is no separate appropriation made for the City of Boston's portion of the expenses of this commission, the same is taken from the appropriation for the Bridge and Ferry Division, Bridge Service. The amount expended during the fiscal year ending December 31, 1928, was \$15,584.52.

ANDERSON BRIDGE, OVER CHARLES RIVER, BETWEEN
BOSTON AND CAMBRIDGE.

A contract was awarded to Walsh & Co., approved October 19, 1928, for repaving the surface of this bridge. The original wood block paving was removed and replaced with reinforced cement concrete pavement six inches thick, laid on the concrete base with a layer of tar paper mopped with asphalt between the top and bottom slabs. Velo quick-setting cement was used in the concrete so that traffic was turned on to the bridge within twenty-four hours after the pouring of the concrete. \$17.53 was paid for advertising this contract

in 1928. The contract was finished on November 17, 1928. When final payment is made the total cost to Boston for this work will be \$2,781.50. A similar amount will be paid by the city of Cambridge.

COTTAGE FARM BRIDGE.

Cottage Farm Bridge, between Boston and Cambridge, has been reconstructed by the Metropolitan District Commission. No car tracks were provided for on the new bridge, which is of concrete and steel. The location of the Boston & Albany Railroad tracks under the bridge, was altered in order to make a better appearance and the Metropolitan District Commission reconstructed the railroad bridge in connection with the work of the highway bridge, the railroad company paying toward the cost of construction \$125,000. The apportionment of cost of the structure on the parties interested has not yet been made.

PRISON POINT BRIDGE.

The channelway under this bridge was blocked by the improvements being made by the Boston & Maine Railroad and no more boats will pass through the channelway. It is therefore advisable that the bridge be strengthened, a new flooring placed and a new type of surfacing laid, so that the constant repairs and patching of this structure may be eliminated.

BRIDGES, REPAIRS, ETC.

ANDERSON BRIDGE, OVER CHARLES RIVER.

Repairing Roadway.

A contract was awarded to Walsh & Co., approved October 19, 1928, for repairing roadway of Anderson Bridge, over the Charles river. The following amount was expended under this contract during 1928:

Advertising	\$17 53
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The contract was finished on November 17, 1928. When final payment is made Boston's share will amount to \$2,781.50.

Respectfully submitted,

JAMES H. SULLIVAN,
Commissioner for the City of Boston.

Boston and Cambridge Bridges, Expenditures for the Year Ending December 31, 1928.
Being the Portion Paid by the City of Boston, Which is One Half of the Total Expenditure.

	Administration.	Anderson Bridge.	Cottage Farm Bridge.	Longfellow Bridge.	Prison Point Bridge.	River Street Bridge.	Western Avenue Bridge.	Totals.
Salaries	\$250 00	\$852 33		\$3,124 67	\$2,347 50			\$6,574 50
Inspection		96 00		166 00	240 00	\$50 00	\$54 00	606 00
Repairs		545 75		670 09	2,902 08	117 30		4,235 22
Lumber					1,461 74			1,461 74
Light		300 28	\$101 79	1,494 83	2 41	255 00	275 03	2,429 34
Fuel					39 82			39 82
Supplies		7 25		32 67	84 58			124 50
Printing and stationery	35 95							35 95
Telephone and traveling expenses	77 45							77 45
Totals	\$363 40	\$1,801 61	\$101 79	\$5,488 26	\$7,078 13	\$422 30	\$329 03	\$15,584 52

BOSTON PUBLIC LIBRARY



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